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# INTERMEDIATE ACCOUNTING

COMPREHENSIVE VOLUME

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## PREFACE

*Intermediate Accounting — Comprehensive Volume* is designed as a text for a year course in accounting to follow the introductory course in this subject. The work is developed to meet the requirements of two groups: (1) the general business student whose interests are primarily concerned with the interpretation and the use of the products of accounting and for whom intermediate accounting may be the final formal study in this field, and (2) the student who has chosen accounting as a career and for whom the intermediate course must provide a broad foundation for the specialized studies to follow. Each of these groups must be afforded a full understanding of accounting standards and concepts that form the framework for contemporary reporting; each of these groups requires full exposure to the practices and the procedures that are employed in the development of financial statements and summaries.

*Intermediate Accounting — Comprehensive Volume* begins with a description of the principal accounting statements. This is followed by a review of the fundamental processes in recording, classifying, and summarizing business transactions. There follows a series of chapters that consider the problems involved in the measurement of business position and the measurement of periodic progress. The study concludes with a consideration of special analytical procedures, including the preparation of statements from incomplete data, errors and their correction, and statement analysis.

The text develops the basic concepts of present-day accounting with special reference to the cost approach, the matching process, the going-concern assumption, and the practices of conservatism, consistency, and full disclosure. Modern statement forms and terminology are emphasized throughout the illustrations and the discussions. Contemporary accounting problems receive special attention. Among the latter, to mention only a few, are: current-performance vs. all-inclusive income statements; the broadened concept of working capital; cost of goods sold and depreciation measurements in periods of changing price levels; accounting for the establishment and the operation of pension plans; accounting for stock rights, stock options, and stock dividends for both the investor and the issuing company; legal considerations in accounting for corporate capital; and conflicts between financial accounting and income tax accounting.

The attempt is made throughout the text to offer full theoretical support for the practices and the procedures that are described and illustrated. When there is theoretical support for alternative procedures, these alternates are suggested. While the topical sequence is related to balance sheet items, the relationship of each item to the income measurement problem is defined and developed. The positions that have been taken by the American Institute of Accountants, the American Accounting Association, and the Securities and Exchange Commission on important matters of theory and practice are included in discussions.

Each chapter closes with a set of questions, a set of exercises, and a set of problems. Questions are designed to provide a review of the basic theory developed in the chapter and may be used by the student for review purposes and by the instructor as a basis for classroom discussion. Exercises are designed to illustrate specific concepts and procedures developed in the text and may be used for classroom demonstrations or may be assigned to students before assignments are made of the longer problems. Problems are designed to offer the student practice in the application of the concepts developed in the chapters. Problems of varying levels have been provided. The first few problems in each chapter offer practice on those basic concepts developed in the related chapter material. These are followed by problems that offer a more comprehensive review of related materials. The problem section in most chapters concludes with problems selected from examinations of the American Institute of Accountants that are appropriate to the material covered and that offer the student a challenge on a high level. Sufficient problems have been provided to enable the instructor to assign different problems to different sections or to assign alternate problems in successive semesters. Text and problem materials have been tested in classroom use.

An appendix is provided where the financial statements for a number of representative companies are reproduced. A summary is presented accompanying each set of statements that points out matters of particular interest in viewing the statements. Reference may be made to these forms throughout the study, and the reporting methods that have been employed may be compared with the standards for such reporting as developed in the different sections.

The authors have attempted, as in earlier volumes of *Intermediate Accounting* and *Advanced Accounting* (1949, South-Western Publishing Co.), to provide a text that can be used as a self-teaching device. The attempt has been made throughout the book to provide explanations

that are simple and direct. Discussions have been supplemented by examples and illustrations. Questions, exercises, and problems point out those matters of particular significance in the study. It is felt that when a text can fulfill a self-teaching function, the instructor is free to utilize class time for the critical examination and evaluation of processes under review and can thus make the highest possible contribution to the development of real accounting maturity on the part of his students.

The authors wish to make grateful acknowledgment to the following persons who read all or parts of *Intermediate Accounting — Comprehensive Volume* prior to its publication and made important suggestions in the development of the material: Thomas M. Dickerson, Western Reserve University; John W. FitzGerald, Ithaca College; W. R. Hammond, University of Georgia; Robert D. Haun, University of Kentucky; R. H. Zulauf, University of Detroit; Andrew Barr, Securities and Exchange Commission; Raymond P. Marple, National Association of Cost Accountants; Charles J. Gaa, American Accounting Association; and Robert L. Kane, Jr., American Institute of Accountants. The authors also wish to express particular appreciation to Mr. Anelise Mosich, of the University of California at Los Angeles, who offered valuable editorial assistance and who also participated in the preparation of the manual and the teachers key that accompany this work.

Acknowledgment is also due to: the American Institute of Accountants, for permission to quote from their copyrighted series of Accounting Research Bulletins and to use certain problems from the Uniform Certified Public Accountant Examination; the American Accounting Association, for quotations from their pronouncements; and those companies listed in the appendix whose statements have been reproduced for illustrative purposes.

W. E. KARRENBROCK  
HARRY SIMONS



# CONTENTS

## PART I — FUNDAMENTAL PROCESSES

### CHAPTER

### PAGE

<b>1</b>	<b>ACCOUNTING STATEMENTS—THE BALANCE SHEET .....</b>	<b>1</b>
	Need for an Appreciation of Accounting, 1; Accounting and the Corporation, 2; Accounting Defined, 2; Accounting Standards, 3; The Matching Process, 5; Accounting Statements, 7; Nature and Content of the Balance Sheet, 7; Current Assets and Current Liabilities, 8; Noncurrent Assets and Liabilities, 11; Proprietorship, 14; Form of the Balance Sheet, 15; Balance Sheet Item Offsets, 19; Balance Sheet Terminology, 20; The Simplified Report, 23. <sup>1</sup>	
<b>2</b>	<b>ACCOUNTING STATEMENTS—THE INCOME AND SURPLUS STATEMENTS.....</b>	<b>29</b>
	Nature of the Income Statement, 29; Nature of the Earned Surplus Statement, 30; Content of the Income Statement, 31; The Current Operating Performance vs. All-Inclusive Income Statement, 32; Form of the Income Statement, 35; Form of the Earned Surplus Statement, 39; Form of the Combined Income and Earned Surplus Statement, 40; The Simplified Income Statement, 41; Certain Basic Concepts in the Measurement Process, 41; Objective, Verifiable Evidence, 41; The Going Concern Assumption, 41; The Conservative Approach, 42; Consistency, 44; Full Disclosure, 44; Assumption of a Stable Monetary Unit, 46; Statement Limitations, 47.	
<b>3</b>	<b>THE RECORDING PROCESS .....</b>	<b>55</b>
	Phases of the Accounting Process, 55; Recording Transactions, 55; Bookkeeping Systems, 55; Business Papers, 56; Books of Original Record, 56; Accounts and the Ledger, 57; Records for Sales and Cash Receipts, 60; Records for Purchases and Cash Payments, 65; The Invoice Record, 68; The Voucher System, 70; The General Journal, 72; Machine Recording Methods, 72.	
<b>4</b>	<b>THE PERIODIC SUMMARY .....</b>	<b>86</b>
	Steps in the Periodic Summary, 86; Adjusting the Accounts, 86; Asset Depreciation and Cost Amortization, 87; Probable Uncollectible Items, 87; Accrued Expenses, 88; Accrued Incomes, 89; Deferred Expenses, 90; Deferred Incomes, 90; Inventories, 92; Accounting Reports on Cash Versus Accrual Basis, 99; From Transactions to Statements, 100.	
<b>5</b>	<b>THE ACCOUNTING PROCESS ILLUSTRATED.....</b>	<b>109</b>
	Steps in the Accounting Process, 109; Books of Original Entry, 109; Posting; Preparation of Trial Balance, 113; Compilation of Adjusting Data, 114; Preparation of the Work Sheet, 117; Preparation of Accounting Statements, 124; Adjusting and Closing Accounts, 127; Preparation of Post-Closing Trial Balance, 131; Reversing the Accounts, 132; Interim Statements, 132.	

---

<sup>1</sup>Questions, exercises, and problems are given at the end of each chapter.

## PART II — WORKING CAPITAL ITEMS

## CHAPTER

## PAGE

<b>6</b>	<b>CASH AND TEMPORARY INVESTMENTS.....</b>	<b>147</b>
	Importance of Working Capital, 147; Nature of Cash, 147; Composition of Cash, 148; Control of Cash, 149; Double Record of Cash, 152; Imprest System of Cash Funds, 152; Reconciliation of Bank Balances, 154; Cash Shortages, 158; Misrepresentation of Current Condition, 158; Cash Overdrafts, 159; The Cash Budget, 159; Nature of Temporary Investments, 162; Composition of Temporary Investments, 163; Recording Purchase and Sale of Marketable Securities, 163; Valuation of Marketable Securities, 166; Presentation of Cash and Temporary Investments on the Balance Sheet, 169.	
<b>7</b>	<b>RECEIVABLES.....</b>	<b>181</b>
	Nature of Receivables, 181; Composition of Receivables, 181; Valuation of Receivables, 184; Bases for Estimate of Bad Debt Losses, 184; Bad Debts Adjustment Based on Sales, 185; Bad Debts Adjustment Based on Receivables, 185; Corrections in Allowance for Bad Debts, 187; Bad Debts Recognition at Time of Loss, 188; Anticipation of Discounts and Other Discharges in Valuation of Receivables, 189; Use of Receivables for Procurement of Cash, 190; Assignment of Accounts Receivable, 191; Discounting Customers' Notes, 193; Presentation of Receivables on the Balance Sheet, 200.	
<b>8</b>	<b>INVENTORIES — COST PROCEDURES.....</b>	<b>213</b>
	Nature of Inventories, 213; Composition of Inventories, 213; Inventories in the Measurement of Profit, 215; Inventory Methods, 215; Items to be Included in Inventory, 216; Effects of Errors in Recording Inventory Position, 217; Inventory Valuation, 219; Inventory Cost, 219; Discounts as Reductions in Cost, 220; Specific Identification of Costs with Inventory Items, 223; First-In, First-Out Method, 224; Average Method, 224; Last-In, First-Out Method, 226; Effects of Cost Flow Procedures Compared, 227; Evaluation of Cost Flow Procedures, 229; Other Cost Procedures, 231; Cost of Latest Purchases, 231; Simple Average of Costs, 232; Base Stock Method, 232; Standard Costs, 233; Cost Apportionment by Relative Sales Value Method, 233.	
<b>9</b>	<b>INVENTORIES — SPECIAL VALUATION PROCEDURES.....</b>	<b>243</b>
	Inventory Valuation at Cost or Market, Whichever is Lower, 243; Limitations in Arriving at Market Value, 243; Methods of Applying Lower of Cost or Market Procedure, 245; Evaluation of Lower of Cost or Market Procedure, 246; Application of Lower of Cost or Market in the Accounts, 247; Deteriorated Goods, Trade-Ins, Repossessions, 250; Losses on Purchase Commitments, 251; Valuation at Market, 251; Uncompleted Contracts — Profit Recognition Based on Degree of Completion, 252.	
<b>10</b>	<b>INVENTORIES — ESTIMATING PROCEDURES IN VALUATION.....</b>	<b>267</b>
	Estimated Costs, 267; Gross Profits Method, 267; Retail Inventory Method, 271; Inventory Valuation in a Manufacturing Concern, 275; Inventories on the Balance Sheet, 282.	
<b>11</b>	<b>CURRENT LIABILITIES.....</b>	<b>295</b>
	Nature of Liabilities, 295; Current Liabilities, 295; Notes and Accounts Currently Payable, 296; Current Maturities of Long-Term Obligations,	

# CONTENTS

## CHAPTER

## PAGE

297; Dividends Payable, 297; Accrued Expenses, 297; Sales Taxes Payable, 298; Payroll Taxes and Income Tax Withholdings, 299; Accounting for Payroll Taxes and Income Tax Withholdings, 302; Liability Under Bonus Agreements, 303; Liability Under Pension Agreements, 305; Prepaid Income Item—Making Claim on Current Assets, 307; Estimated Liabilities, 308; Estimated Tax Liabilities, 309; Estimated Liability on Customer Premium Offers, 312; Estimated Liability Under Guarantees for Service and Replacements, 315; Estimated Liability on Tickets, Tokens, and Purchase Orders Outstanding, 315; Contingent Liabilities, 317; Contingent Claims Calling for Surplus Appropriations, 319; Current and Contingent Liabilities on the Balance Sheet, 320.

## PART III — NONCURRENT ITEMS

<b>12</b>	<b>INVESTMENTS — STOCKS.....</b>	<b>333</b>
	Nature of Investments, 333; Classification of Investments, 333; Composition of Long-Term Investments, 333; Investments in Stock, 333; Accounting for Investments in Stock, 334; Stock Valuation, 336; Dividends, 337; Stock Dividends, 338; Stock Split-Ups, 341; Stock Rights, 342; Accounting for Stock Rights, 343; Theoretical Value of Stock Rights, 345; Liquidating Dividends, 347; Stock Redemption, 348; Stock Conversion, 348; Ownership of Controlling Interest in Stock, 349; Investments and Tax Accounting, 353.	
<b>13</b>	<b>INVESTMENTS — BONDS.....</b>	<b>361</b>
	Investments in Bonds, 361; Kinds of Bonds, 361; Bond Yield, 363; Amortization and Accumulation Procedures, 365; Methods of Amortization and Accumulation, 366; Accounting for Long-Term Investments in Bonds, 368; Sale of Bonds Prior to Maturity, 372; Bond Redemption Prior to Maturity, 373; Bond Conversion, 374; Bond Valuation, 375; Investment in U. S. Savings Bonds, 376; Long-Term Notes and Mortgages, 378.	
<b>14</b>	<b>INVESTMENTS — FUNDS AND MISCELLANEOUS ITEMS.....</b>	<b>387</b>
	Kinds of Funds, 387; Fund Accumulation, 388; Accounting for Sinking Funds, 389; Preferred Stock Redemption Funds, 394; Funds and Reserves, 395; Miscellaneous Investments, 396; Cash Surrender Value of Life Insurance, 397; Interests in Real Estate, 400; Advances, 400; Deposits, 401; Interests in Partnerships, 401; Interests in Trusts and Estates, 402; Investments on the Balance Sheet, 402.	
<b>15</b>	<b>PLANT AND EQUIPMENT — ACQUISITION, USE, AND RETIREMENT</b>	<b>409</b>
	Nature of Plant and Equipment, 409; Composition of Plant and Equipment, 409; Capital and Revenue Expenditures, 410; Valuation of Plant and Equipment, 411; Acquisition of Plant and Equipment, 411; Purchase for Cash, 412; Purchase on Deferred Payment Plan, 413; Acquisition by Exchange, 413; Acquisition by Issuance of Securities, 416; Acquisition by Self-Construction, 417; Acquisition by Gift or Discovery, 418; Interest During Period of Construction, 420; Other Expenditures During Period of Organization and Construction, 421; Expenditures Involved in Use of Plant and Equipment Items, 421; Establishment of Allowance for Maintenance and Repairs, 422; Plant	

	and Equipment Retirements, 423; Special Problems Relating to Asset Acquisitions, 424; Land, 424; Buildings, 426; Machinery and Equipment, 427; Tools, 427; Patterns and Dies, 428; Furniture and Fixtures, 428; Motor Vehicles, 428; Returnable Containers, 428; Plant Asset Records, 430.	
<b>16</b>	<b>PLANT AND EQUIPMENT — DEPRECIATION AND DEPLETION....</b>	<b>441</b>
	Nature of Depreciation, 441; Causes of Depreciation, 441; Factors in Arriving at Periodic Cost Allocation, 443; Recording Depreciation, 444; Methods for Cost Allocation, 445; Straight-Line Method, 445; Service-Hours Method, 447; Productive-Output Method, 448; Reducing-Charge Methods, 449; Composite Depreciation, 454; Retirement, Replacement, Appraisal Systems, 455; Depreciation Accounting and Property Replacement, 455; Depletion, 456; Recording Depletion, 457; Dividends Representing Proceeds from Wasting Assets, 458.	
<b>17</b>	<b>PLANT AND EQUIPMENT — REVALUATIONS.....</b>	<b>471</b>
	Cost and Depreciation Changes, 471; Changes in Estimates of Asset Life or Depreciable Cost, 471; Recording Depreciation Changes in the Accounts, 473; Depreciation of "Emergency Facilities," 475; Changes in Asset Cost Through Betterments, 477; Departures from Cost, 478; Replacement Values for Assets, 479; Use of Appraisal Data, 481; Asset Devaluation Recorded in the Accounts, 483; Corporate Readjustment or the Quasi-Reorganization, 484; Asset Appreciation Recorded in the Accounts, 486; Depreciation on Asset Appreciation, 488; Surplus Appropriations to Assure Asset Replacement at Higher Price Level, 492; Appraisal Values on the Balance Sheet, 492; Disposal of Depreciable Properties on Which Appreciation Has Been Recorded, 493; Depreciation and Increasing Replacement Costs, 493.	
<b>18</b>	<b>INTANGIBLE ASSETS AND DEFERRED CHARGES.....</b>	<b>505</b>
	Nature of Intangible Assets, 505; Valuation of Intangible Assets, 505; Patents, 508; Copyrights, 509; Franchises, 509; Trade-Marks and Trade Names, 510; Formulas and Special Processes, 511; Goodwill, 511; Calculation of Goodwill, 511; Goodwill Adjustment After Acquisition, 516; Organization Costs, 517; Leaseholds and Leasehold Improvements, 518; Deferred Charges, 520; Short-Term Deferred Expenses, 521; Insurance, 522; Coinsurance, 522; Accounting for Fire Loss, 525.	
<b>19</b>	<b>LONG-TERM LIABILITIES.....</b>	<b>545</b>
	Long-Term Debt, 545; Bonds Payable, 545; Recording the Bond Issue, 546; Premium and Discount Amortization Procedures, 551; Accounting for Bonds Payable, 553; Bond reacquisition Prior to Maturity, 555; Bond Retirement at Maturity, 557; Serial Bonds, 558; Amortization Procedures for Serial Bonds, 558; Serial Bond Retirement Prior to Maturity, 560; Serial Bond Amortization Procedures When Bond Year and Fiscal Year Do Not Coincide, 561; Bond Redemption, 562; Bond Conversion, 563; Bond Refunding, 566; Deferred Credits, 569; Long-Term Liabilities on the Balance Sheet, 571.	

# PART IV — CORPORATE CAPITAL

CHAPTER

PAGE

## 20 CAPITAL STOCK — CAPITAL UPON CORPORATE FORMATION.... 583

Forming the Corporation, 583; Nature of Capital Stock, 584; Legal or Stated Capital, 584; Par and No-Par Stock, 586; Preferred Stock, 587; Common Stock, 590; Recording Issuance of Capital Stock, 590; Issue of Capital Stock Illustrated, 594; Subscription Defaults, 594; Recording Authorized Stock in the Accounts, 595; Sale of Security Units, 596; Stock Issued for Property, 598; Treatment of Premium and Discount on Sale of Stock, 599; Capital Stock Assessments, 600; Organization Costs, 600; Issuance of Stock in Exchange for a Business, 601.

## 21 CAPITAL STOCK — CHANGES SUBSEQUENT TO FORMATION.... 619

Preferred Stock Redemption, 619; Treasury Stock, 620; Entries for Treasury Stock, 622; Acquisitions of No-Par Treasury Stock, 627; Surplus Appropriations for Treasury Stock Holdings, 628; Donations of Treasury Stock, 629; Stock Rights and Stock Purchase Options, 632; Stock Conversion, 636; Recapitalization, 638; Stock Split-Ups, 639.

## 22 SURPLUS — PAID-IN, REVALUATION, AND EARNED..... 655

Nature of Surplus, 655; Classification of Surplus, 655; Paid-In Surplus, 659; Revaluation Surplus, 661; Earned Surplus, 663; Dated Earned Surplus, 663; Dividends, 664; Cash Dividends, 666; Scrip Dividends, 666; Property Dividends, 667; Stock Dividends, 667; Liquidating Dividends, 672; Dividends on Preferred Stock, 673; Dividends on No-Par Stock, 674; Extraordinary Dividend Distributions, 674; The Formal Dividend Announcement, 674; Source of Dividends, 675.

## 23 SURPLUS — APPROPRIATIONS, THE SURPLUS STATEMENT..... 689

Reserves, 689; Surplus Appropriations, 690; Surplus Appropriations Relating to Stock Reacquisitions, 692; Surplus Appropriations Relating to Corporate Obligations, 692; Surplus Appropriations Relating to Stock Redemption Programs, 694; Surplus Appropriations Relating to Plant Expansion Programs, 694; Surplus Appropriations for Possible Future Losses, 694; Surplus Appropriations to Describe Business Purposes Served by Retained Earnings, 700; Objections to Surplus Appropriation Procedures, 700; The Surplus Statement, 701; Capital on the Balance Sheet, 705; Special Measurements Based on Corporate Statements, 705; Book Value per Share, 705; Earnings Per Share, 712.

# PART V — ANALYTICAL PROCESSES

## 24 STATEMENTS FROM INCOMPLETE DATA..... 731

Single Entry, 731; Records in Single-Entry Bookkeeping, 731; Balance Sheet Preparation, 732; Determination of Profit or Loss from Comparative Balance Sheets, 732; Preparation of Income Statement, 733; Preparation of Statements from Single-Entry Data Illustrated, 737; Change from Single Entry to Double Entry, 742; Use of Single Entry Bookkeeping, 743.

## 25 ERRORS AND THEIR CORRECTION..... 757

Preventing Misstatements, 757; Types of Errors, 758; Correcting Entries, 759; Correction of Surplus, 770; Correction of Statements of Prior Years, 773.

CHAPTER	PAGE
<b>26 STATEMENT ANALYSIS — USE OF COMPARATIVE DATA.....</b>	<b>793</b>
Statement Analysis, 793; Primary Inspection of Accounting Statements, 794; Analytical Procedures, 795; Comparative Statements, 795; Comparative Statements — Horizontal Analysis, 796; Comparative Statements — Vertical Analysis, 802; Common-Size Statements, 805; Statement Accounting for Variation in Net Income, 807; Break-Even Point Analysis, 810; Statement of Application of Funds, 813.	
<b>27 STATEMENT ANALYSIS — SPECIAL RATIOS AND MEASUREMENTS</b>	<b>825</b>
Extensions of Horizontal and Vertical Procedures, 825; Current Ratio, 826; Acid-Test Ratio, 828; Other Measures of Working Capital Position, 828; Analysis of Receivables, 829; Merchandise Inventory Analysis, 831; Ratio of Owners' Capital to Liabilities, 834; Ratio of Plant and Equipment to Long-Term Debt, 835; Ratio of Owners' Capital to Plant and Equipment, 835; Book Values Per Share of Stock, 836; Other Measurements of Balance Sheet Structure, 837; Ratio of Sales to Assets, 837; Ratio of Sales to Plant and Equipment, 838; Rate Earned on Total Assets, 838; Rate Earned on Total Owners' Capital, 839; Times Bond Interest Requirements Were Earned, 840; Times Preferred Dividend Requirements Were Earned, 840; Rate Earned on Common Equity, 841; Earnings Per Share on Common, 841; Distribution of Earnings to Creditor and Ownership Equities, 842; Other Measurements of Operations, 842; Interpretation of Analyses, 842.	
<b>28 STATEMENT OF APPLICATION OF FUNDS.....</b>	<b>851</b>
Nature and Purpose of the Statement of Application of Funds, 851; Preparation of the Statement of Application of Funds, 853; Analysis of Account Changes in Preparation of Statement, 855; Sources of Funds, 857; Applications of Funds, 857; Adjustments in Developing Source and Application Amounts, 858; Adjustments on Working Papers, 861; Preparation of Working Papers and Statement Illustrated, 866; Special Problems, 873.	
<b>APPENDIX.....</b>	<b>895</b>
<b>INDEX.....</b>	<b>939</b>

## *Accounting Statements*

### *The Balance Sheet*

#### **NEED FOR AN APPRECIATION OF ACCOUNTING**

On referring to corporate financial statements, one finds a report or certificate submitted by the public accounting firm employed to examine the statements and to offer an impartial opinion concerning them. When the accountants do not find it necessary to take exception to any accounting treatment, they submit an unqualified certificate to accompany the statements that reads as follows:

We have examined the balance sheet of the \_\_\_\_\_ Company as of December 31, 19\_\_\_\_, and the related statements of income and surplus for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records as we considered necessary in the circumstances.

In our opinion, the accompanying balance sheet and statements of income and surplus present fairly the financial position of the \_\_\_\_\_ Company at December 31, 19\_\_\_\_, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

If a person is to be able to interpret intelligently accounting exhibits and summaries concerning financial position and operating results, he must be familiar with those "generally accepted accounting principles" that are applied in the development of accounting data. If a person is actually to undertake the preparation of accounting reports, there is an even greater need for a thorough appreciation of the underlying concepts so that he can assert that such reports "present fairly the financial position . . . and the results of . . . operations . . . in conformity with generally accepted accounting principles." A study of accounting principles and procedures is necessary for all persons who expect to win a responsible place in business. Such a study is equally important for those who are interested in a real understanding of the business enterprise as the fundamental unit in American economic society.

Accounting serves many groups and faces ever-increasing responsibilities. While originally concerned with the demands made by the owners or the creditors of a business for financial data, the accountant now finds a greater number of different groups vitally concerned with

his reports. Management, owners, creditors, and employees, as well as the government, trade associations, labor unions, and the public, seek information concerning the financial activities of the business unit. Increasingly the products of accounting are being used as a basis for economic, political, and social policy and action. Modern accounting, thus, is called upon to meet public as well as private responsibilities. Accounting standards and practices represent the response by the profession to the needs and the expectations of the groups calling for financial information. These standards and practices must be widely understood. Financial summaries must be prepared within the framework of such standards with both intelligence and integrity. Only under such circumstances can the products of accounting be received with full appreciation and real confidence by those seeking information as a basis for private or public judgment.

#### **ACCOUNTING AND THE CORPORATION**

The corporation is the dominant form of large business organization in America. Although there exist a greater number of sole proprietorships and partnerships than corporations, the volume of business done by corporations exceeds by far that of the other forms of business organization. Furthermore, the value of properties owned by corporations is greatly in excess of the value of properties belonging to both sole proprietorships and partnerships.

By its very nature the corporate form calls for extended and accurate accounting. In large corporate enterprises the investment and the management groups are separated. Ownership interests are liquid and readily transferable. There are more than 6,500,000 stockholders in the United States today, and bondholders add to the total of the corporate investment group. The number of persons within this group having any first-hand knowledge of the activities of the companies in which they have interests is small. Accounting becomes the only medium for information concerning corporate status and progress for the investor, both present and prospective. Absentee and scattered investment groups must be provided with financial data that tell the business story fully and dependably.

#### **ACCOUNTING DEFINED**

Transactions relating to the purchase and the sale of goods and services at a price comprise what is known as business and constitute the raw materials of accounting. It is through the means of accounting that the transactions of the business unit are summarized so that its financial position and progress may be known.

The Committee on Terminology of the American Institute of Accountants has defined accounting in the following manner:

Accounting is the art of recording, classifying, and summarizing in a significant manner and in terms of money, transactions and events which are, in part at least, of a financial character, and interpreting the results thereof.<sup>1</sup>

The Committee, faced with the problem of defining accounting as a science or an art, chose the latter as providing emphasis upon the knowledge, skill, experience, and constructive efforts that are applied by the accountant in the problems of measurement. The inclusion of the interpretive function in the definition of accounting is also worthy of special note. The accountant is in a position to render invaluable service to management by the development of significant analyses that interpret the past and provide guides for more effective control and utilization of resources in the future.

#### **ACCOUNTING STANDARDS**

Definition of accounting as an art does not rule out the fact that the accountant's work is practiced within a framework of fundamental doctrine. This body of doctrine consists of certain standards and practices that have won acceptance within the profession because of their logic as well as their proved usefulness. When reference is made to "accounting principles," it should be understood that the term is used to suggest, not fundamental truths or natural laws of universal applicability, but rather that body of standards that serves to point to what may be considered good accounting practice.

In recent years the accounting profession has applied great effort to a careful re-examination and critical analysis of fundamental theory as well as the practices found in the field of accounting. From such study it has sought to define clearly what may be considered to be standards of sound practice in terms of contemporary problems. With agreement as to certain basic standards, the profession encourages the broad application of such theory so that accountants' products may be uniform and comparable and hence can be accepted with confidence.

Several groups have played important roles in the expression and the development of accounting standards. Most prominent among these groups have been the American Institute of Accountants, the American Accounting Association, and the Securities and Exchange Commission.

The American Institute of Accountants, in cooperation with governmental, business, and educational groups, has taken a leading role in

<sup>1</sup>*Accounting Research Bulletin No. 9*, "Report of Committee on Terminology," May, 1941 (New York: American Institute of Accountants), p. 67.

this program.<sup>1</sup> Arguments on matters of fundamental accounting theory, as well as the conclusions reached by special research committees of the American Institute of Accountants, have been summarized in official pronouncements and bulletins. Since 1939 the Institute has released a series of Accounting Research Bulletins setting forth special accounting problems and the conclusions and recommendations made by its Committee on Accounting Procedure.<sup>2</sup>

The American Accounting Association has made important contributions to the development of a coordinated body of basic doctrine by continuing studies and the release of official pronouncements.<sup>3</sup> The Executive Committee of this organization issued a summary in 1936 called "A Tentative Statement of Accounting Principles Underlying Corporate Financial Statements." This statement was revised in 1941 and then again in 1948 when it was issued under the title "Accounting Concepts and Standards Underlying Corporate Financial Statements." The study, development, and expression of accounting standards is viewed as a continuing activity, and a special Committee on Concepts and Standards was appointed for this purpose. This committee has issued several statements supplementing the 1948 statement.<sup>4</sup>

The Securities and Exchange Commission has made real contributions to the development and the expression of standards by issuing rules and regulations relating to the reports to be filed by its registrants and rendering opinions on matters of theory and practice in its official decisions and reports and in its special Accounting Series Releases. The issuance of the series of accounting releases by the Commission was announced as a "program for the publication, from time to

<sup>1</sup>The American Institute of Accountants is the national organization of certified public accountants and is primarily concerned with professional public accounting. The objects of the Institute are to unite the profession, to advance the interests of public accountants, to set standards for admission into the profession, to advance the art of accounting, and to improve accounting education. The Board of Examiners of the Institute prepares the Uniform Certified Public Accountant Examinations, which are now used by all of the states, the District of Columbia, and four territories. The Institute publishes an official monthly journal, *The Journal of Accountancy*. The office of the American Institute of Accountants is at 270 Madison Avenue, New York 16, New York.

<sup>2</sup>*Accounting Research Bulletin No. 42*, issued in November, 1952, is the latest in the series at this printing.

<sup>3</sup>The American Accounting Association is the successor organization to the American Association of University Instructors in Accounting established in 1916. The objects of the organization are to encourage and sponsor accounting research, to develop accounting principles, to promote studies of accounting as an agency of control of business enterprise and of economic affairs, and to improve methods of accounting instruction. The Association publishes an official quarterly magazine, *The Accounting Review*. The office of the American Accounting Association is at the College of Commerce and Business Administration, University of Illinois, Urbana, Illinois.

<sup>4</sup>*Supplementary Statement No. 4* is the latest in the series at this printing.

time, of opinions on accounting principles for the purpose of contributing to the development of uniform standards and practices in major accounting questions."

It should be observed that the various groups named feel that their conclusions should be regarded, not as rigid patterns and restraints, but rather as guides to good practice. The American Institute states with respect to its Accounting Research Bulletins that, in the absence of formal adoption by the Institute membership, "the authority of the bulletins rests in the general acceptability of the opinion so reached." Further, it "recognizes that its general rules may be subject to exception and that in extraordinary cases truthful presentation and justice to all parties at interest may require exceptional treatment." The American Accounting Association similarly suggests in its statement of accounting concepts and standards: "In the application of standards individual differences in industries or in enterprises within an industry may require that allowance be made for well-established practices..." While adherence to the standards put forth is encouraged, it is recognized that in the preparation of reports telling the business story fully, clearly, and honestly, the doors must be left open to the exercise of judgment on the part of the accountant in the determination of the degree of conformity to standards that is proper under different circumstances, as well as the mode of their application. There is also full recognition of the need for the continuous re-examination of accepted standards and rules and their restatement and revision whenever necessary in keeping pace with changes in the economic and financial environment.

The progress that has been made in defining the body of doctrine that is applicable to contemporary reporting has had a most healthy effect upon both the accounting profession and those who look to the services offered by the profession. The practitioner, aware of standards that have general support, is afforded guidance as well as a sense of security in his performance. The product of accounting is improved and at the same time achieves fundamental uniformity and comparability. The reader of the accounting report, familiar with the standards that have been applied in its preparation, can view the report with confidence, interpret it properly, and compare it with others prepared within a common framework.

#### **THE MATCHING PROCESS**

The accountant is primarily the historian.

It is his function to record, classify, and summarize business activities in such a manner that the data can be used as a means for evaluation of the past as well as a guide for the

future. In fulfilling the historical function the accountant must be impartial and systematic in seeking out the facts of business. His findings should be objective and verifiable.

Management of the business unit engages in activities directed to the increase of business resources—the production of profits. Recognition of the progress made cannot be delayed until the termination of activities at some unascertainable future date but must be a continuing process. Accordingly, the life of the business unit is broken up into arbitrary segments, and periodic statements of progress are provided. Such statements must be tentative in nature, since the full story is yet to be told and the future may modify the inferences made in the periodic analyses.

Business may be considered to consist of two streams of activities. First, there are the regular acquisitions of goods and services required for the performance of its objectives. These activities result in business *costs*. There follows the accomplishment of the objectives of the business to recover costs as well as profit through the sale of goods and services. These activities are the source of business *revenue*. The *net income* from operations for a specified period is determined by matching against the revenues that may be considered to be realized within the period those costs that are considered applicable thereto. If incoming revenues exceed outgoing costs, there is an increase in the business net assets accruing to the ownership group; when revenues fail to equal costs, a decrease in net assets identified with the ownership group results. The application of costs against revenues is referred to as the *matching process* and is fundamental to all accounting activity.

Both costs and revenues are expressed in the matching process in terms of the homogeneous qualitative element common to both—a money price. The price for the business effort, or cost, is found in the amount paid for the goods and services at the time these were originally acquired. The price that is assigned to the business accomplishment, or revenue, is the bargained amount arrived at between buyer and seller. As goods and services are acquired, then, their cost is established and recorded. These costs may be marshaled into different combinations where the business unit unites different acquisitions in the development of its services or products. Ultimately such costs, individually or as regrouped, are assigned to the revenue that they have produced.

The use of original historical cost in the matching process is commonly referred to as the *cost principle*. Independent buyers and sellers through negotiation reach agreement as to the value of the utility being transferred. This bargained acquisition is the buyer's cost, his investment in the future. It is a value that is immediately available and ob-

jective, and is accepted as the starting point in the measurement process.

### **ACCOUNTING STATEMENTS**

It has already been suggested that business continuity is broken up into a series of time intervals and that measures of progress and position are developed for each such interval. The reporting period generally selected for a comparison of costs and revenues and their effect upon the business position is one year, either the *calendar year* or some other arbitrarily selected *fiscal year*. At the end of each period two principal reports, the *balance sheet* and the *income statement*, are prepared. When the difference in the net assets for the year is not fully explained by the income statement, a third statement is usually provided to supplement profit and loss data and to offer a full reconciliation of the change. This statement is known as the *statement of changes in capital*, or as applied to the corporation, the *earned surplus statement*.

### **NATURE AND CONTENT OF THE BALANCE SHEET**

The balance sheet, also variously called the *statement of condition* and the *statement of resources and liabilities*, shows the financial position of the business unit at a particular moment. This position results from the effect of transactions of the period just completed upon the financial position of the business at the beginning of the period. More broadly, the financial position is the cumulative result of all transactions of the business from its very start. Since the balance sheet is basically historical, reporting the position growing out of a series of recorded transactions, only a full understanding of the accounting conventions and practices that are followed in the recording process offers an appreciation of the nature of the end product. Some of the fundamental concepts of balance sheet content, form, and presentation are considered in this chapter. A consideration of the individual balance sheet items in later chapters will serve to develop more fully the nature of the balance sheet and its proper interpretation.

The balance sheet is an expansion of the basic accounting equation,  $\text{Assets} = \text{Liabilities} + \text{Proprietorship}$ . The character and the amount of the assets are exhibited. These are offset by the equities in such assets identified with the creditor and the ownership groups. Such equities normally bear no relationship to specific assets and hence are presented as equities identified with the assets as a whole.

For accounting purposes, assets include not only property rights and values acquired, but also those costs that have not been applied to earnings of the past and that are considered to afford utility in the pro-

duction of future revenue. Assets, then, include both money resources — cash, receivables, and marketable securities —and those recorded costs that are recognized as recoverable and hence properly assignable to income of future periods— equipment, patents, prepaid rent, etc.

Liabilities measure the equities of the creditor group in the total resources. Such equities arise as the result of contributions by this group as well as the recognition of compensation to this group for its contributions. The method of liability liquidation varies. Claims may call for payment in cash, or they may be liquidated by means of services to be performed or goods to be delivered.

Proprietorship measures the interest of the ownership group in total resources. Such equities originally arise as the result of contributions by the owners, and these equities change with the change in net assets resulting from operations.

Balance sheet items are normally classified in a manner that will facilitate the analysis and the interpretation of financial data. Information of primary concern to all parties is the business unit's solvency its ability to meet current obligations. Accordingly, assets and liabilities are generally divided and classified as (1) *current* or *short-term* items and (2) *noncurrent*, *fixed*, or *long-term* items. Classification of current items makes it possible to arrive at a company's *working capital*, the difference between current assets and current liabilities, which is the liquid buffer available in meeting demands and contingencies of the future.<sup>1</sup>

#### **CURRENT ASSETS AND CURRENT LIABILITIES**

Generally the "current" concept has been held to mean, with respect to liabilities, those claims due within the period of one year, and with respect to assets, cash and those assets that are expected to be converted into cash within this same period. This definition would call for the exclusion of inventories and receivables that are not expected to be converted into cash within one year and the exclusion of prepaid expenses that will not produce cash. Liabilities maturing after one year from balance sheet date would likewise be excluded from current reporting. Both the American Institute of Accountants and the American Accounting Association, however, have recommended a broadening of the current definition to emphasize a company's ability to meet claims out of proceeds of current operations rather than ability to pay on the assumption of business liquidation. Accordingly, current items are held to embrace

<sup>1</sup>"Working capital" is used in this text to denote the excess of current assets over current liabilities. Sometimes this excess is referred to as "net working capital," the term "working capital" then being used to denote total current assets.

those items relating to the particular company's "normal operating cycle." These groups conceive ordinary operations to involve the circulation of capital within the current group. Cash is converted into inventories, inventories into receivables, and receivables ultimately into cash again. Items falling within this round are considered current. These groups hold, too, that prepaid expenses are properly includible in the current grouping since they represent a substitute for expenditures that would otherwise call for the use of current assets within the operating cycle.

The Institute position on working capital is as follows:

. . . For accounting purposes, the term *current assets* is used to designate cash and other assets or resources commonly identified as those which are reasonably expected to be realized in cash or sold or consumed during the normal operating cycle of the business. Thus the term comprehends in general such resources as (a) cash available for current operations and items which are the equivalent of cash, (b) merchandise or stock on hand, or inventories of raw materials, goods in process, finished goods, operating supplies, and ordinary maintenance material and parts, (c) trade accounts, notes, and acceptances receivable, (d) receivables from officers (other than for loans and advances), employees, affiliates, and others if collectible in the ordinary course of business within a year, (e) installment or deferred accounts and notes receivable if they conform to normal trade practices and terms within the business, (f) marketable securities representing the investment of cash available for current operations, and (g) prepaid expenses such as insurance, taxes, unused royalties, current paid advertising service not yet received, and other items which, if not paid in advance, would require the use of current assets during the operating cycle.<sup>1</sup>

The Institute further suggests that the one-year period is to be used as a basis for current asset classification in those instances where the average operating cycle is less than twelve months; but where the operating cycle exceeds twelve months, as in the case of the tobacco, distillery, and lumber industries, the longer period is to be used.

In accordance with the foregoing concept of current assets, the bulletin lists the following items as not includible in this category:

- (a) Cash and cash claims restricted to use for other than current operations, designated for the acquisition of noncurrent assets, or segregated for the liquidation of noncurrent debts.
- (b) Advances or investments in securities, whether marketable or not, made for the purposes of control, affiliation, or other continuing business advantage.
- (c) Receivables not expected to be collected within twelve months arising from unusual transactions such as the sale of capital assets or advances to affiliates, officers, or employees.

<sup>1</sup>*Accounting Research Bulletin No. 30*, "Current Assets and Current Liabilities — Working Capital," August, 1947 (New York: American Institute of Accountants), p. 248.

- (d) Cash surrender value of life insurance policies.
- (e) Land and other natural resources.
- (f) Depreciable assets.
- (g) Other balances representing unamortized costs fairly chargeable to the operations of several years.

Current liabilities are described as follows:

. . . The term *current liabilities* is used principally to identify and designate debts or obligations, the liquidation or payment of which is reasonably expected to require the use of existing resources properly classifiable as current assets or the creation of other current liabilities. As a balance-sheet category, the classification is intended to include obligations for items which have entered into the operating cycle, as in the case of payables incurred in the acquisition of materials and supplies to be used in the production of goods or in providing services to be offered for sale, collections received in advance of the delivery of goods or performance of services, and debts which arise from operations directly related to the operating cycle, such as accruals for wages, salaries, commissions, rentals, or royalties. Other liabilities, the regular and ordinary liquidation of which is expected to occur within a relatively short period of time, usually twelve months, are also intended for inclusion, such as short-term debts arising from the acquisition of capital assets, serial maturities of long-term obligations, and agency obligations arising from the collection or acceptance of cash or other assets for the account of a third party. Income taxes should be included as current liabilities even though the entire amount may not be payable within twelve months.<sup>1</sup>

The current liability classification, however, is not intended to include the following items, inasmuch as these items will not require the use of current funds:

- (a) Obligations due at an early date that are to be discharged by means of the issuance of new obligations in their places. (There should be disclosure by parenthetical remark, footnote, or otherwise of the reason for continuing to report such items as noncurrent.)
- (b) Debts that are provided for by fund accumulations reported as noncurrent assets.
- (c) Life insurance policy loans that are to be liquidated by deduction from the proceeds of the policy upon maturity or cancellation.

While a majority of accounting reports continue to follow the strict "one year" concept in the classification of current items, there has been a steady movement towards acceptance of the Institute's position since release of Bulletin No. 30 in 1947. In view of the sound logic in support of a broader interpretation for working capital, illustrations on the following pages are prepared in accordance with Institute recommendations.

Current assets, with the exception of inventories and marketable securities, are normally reported at their estimated realizable values.

<sup>1</sup> *Ibid.*, p. 249.

Thus current receivable balances are reduced by allowances for estimated bad debts. Both inventories and marketable securities may be reported at cost or on the basis of "cost or market, whichever is lower." The latter method has been supported as a conservative approach to the measurement of assets and working capital position.

Few problems are generally found in the valuation of current liabilities. Amounts payable can usually be determined or accrued accurately. Some items may require estimates as to the amounts ultimately payable. However arrived at, the claim, if payable currently, must be reflected under the current heading.

### **NONCURRENT ASSETS AND LIABILITIES**

Assets and liabilities that do not qualify for presentation under the current headings are classified under a number of noncurrent headings. Noncurrent assets are generally listed under separate headings such as Investments, Plant and Equipment, Intangible Assets, Deferred Charges, and Other Assets. Noncurrent liabilities are listed under such headings as Long-Term Debt, Deferred Credits, and Other Liabilities.

*Investments.* Long-term investments held for periodic income, value appreciation, or control purposes are reported under the caption *Investments*. Examples of items properly shown under this heading are long-term stock, bond, and mortgage holdings; securities of affiliated companies as well as advances to such companies; sinking fund assets consisting of cash and securities held for the retirement of bonds, the redemption of stock, the replacement of buildings, or the payment of pensions; investments in plant sites not in current use; and other miscellaneous investments not used directly in the operations of the business. Investments are normally reported at cost.

*Plant and Equipment.* Properties of a tangible and relatively permanent character that are used in the normal business operations are reported under the heading *Plant and Equipment*. Land, buildings, machinery and equipment, furniture and fixtures, and tools are included under this heading. Plant and equipment items are normally reported at their original cost less the accumulated depreciation calculated upon the basis of their time or service utility.

*Intangibles.* The long-term rights and privileges of an intangible character acquired for use in the normal business operations are reported under the heading *Intangibles*. Included in this class are such items as goodwill, patents, trademarks, franchises, copyrights, formulas, and organization costs. Intangible assets are reported at cost less amounts that have been written off. Frequently the term *fixed*

*assets* is used to apply to all of those long-term properties used in the production of goods and services. As thus used, fixed assets would consist of two groups—*fixed tangibles* represented by plant and equipment items and *fixed intangibles* represented by the items named above.

*Deferred Charges.* Certain costs—such as bond discount and the expense of issuing bonds, various developmental and improvements costs, leaseholds, and other similar charges—result in services or benefits to be realized over a number of periods. Future periods, then, are chargeable with a proper share of such costs. These items are appropriately reported under the heading *Deferred Charges*. One frequently finds supply inventories and short-term prepaid expense items regarded as noncurrent items and listed in the deferred charges category. But the trend has been toward the recognition of these items as current assets since the release by the American Institute of Accountants of Bulletin No. 30, referred to on page 9, which recommends such practice.

*Other Assets.* Occasionally certain noncurrent items cannot satisfactorily be included under any of the previous classifications and are listed under separate descriptive headings or under the general heading *Other Assets*. Such items as cash funds representing miscellaneous deposits received from customers, deposits made with vendors to secure contracts, advances to officers, and construction in progress are frequently reported as Other Assets.

*Long-Term Debt.* Long-term notes, bonds, mortgages, and similar obligations that will not require current funds for their retirement are generally reported under the heading *Long-Term Debt*. When a note, a bond issue, or a mortgage formerly classified as a long-term obligation becomes due and is to be paid from the current funds within a year, it should be classified as current. Frequently the term *fixed liabilities* is used to refer to the long-term obligations named.

*Deferred Credits.* Revenues for goods, services, or benefits to be provided over a number of future periods are recorded as *deferred credits* until there has been full performance of these contracts and the revenue can be considered earned. Normally costs are involved in the performance of a contract, and the gain or the loss on the transaction still remains to be determined in future periods. Amounts received in advance on leaseholds, deposits and advances received on long-term construction contracts, and premiums received on long-term service and insurance contracts are examples of transactions giving rise to obligations that are properly shown under the deferred credits heading until such time as these can be recognized as income.

Frequently one finds all deferred income items reported under the deferred credits heading, including income received for goods and services to be provided in the near future; but this classification is appropriate only if the item is to make no significant claim upon the current assets reported on the balance sheet. When there are significant costs involved in the course of income realization and these costs are to be met from current assets presently reported, the deferred income balance is really a claim against current assets and hence properly reportable as a current liability. If the assets consumed in rendering the service are less than the amount originally received, a profit will emerge; if assets consumed exceed the revenue to be recognized, a loss will ultimately be recorded. Prepaid subscriptions income, for example, is properly recognized only as a current liability until the claim for services is fully discharged and the net income is determinable.

*Other Liabilities.* Occasionally certain noncurrent liabilities cannot satisfactorily be reported under the long-term debt heading or the deferred credits heading and are listed under separate descriptive headings or under the general heading *Other Liabilities*. Such items as liabilities to customers on long-term deposits, long-term obligations to company officers or affiliated companies, matured but unclaimed bond principal and interest obligations, amounts payable under pension plans, and equities of minority interests in subsidiary company assets are frequently reported under the caption *Other Liabilities*.

*Contingent Liabilities.* Past activities may have given rise to the possibility of future liabilities, although legal obligations do not exist on the date of the balance sheet. Such *contingent liabilities* are normally reported by means of a parenthetical remark, by a notation under a separate contingent liability heading shown after reported liabilities, or by a footnote in the balance sheet. Possible obligations resulting from the discounting of customers' notes, accommodation endorsements on obligations of other parties, pending lawsuits, and taxes and other charges in dispute are examples of items frequently reported as contingent liabilities.

Careful distinction should be made between the contingent liabilities just described and liabilities that exist but that cannot be definitely and finally measured in amount on the balance sheet date. For example, an income tax liability may have accrued although the exact amount of the obligation is not yet determinable; or payments may have to be made ultimately to employees under retirement plans although the costs of such benefits cannot be finally determined. These claims, even though arrived at through estimates, cannot be ignored in

setting forth the financial condition. The estimated tax liability is a current item and hence is properly reported under the current heading; the estimated pensions are not currently payable and hence would be reported under a noncurrent heading.

### **PROPRIETORSHIP**

In the case of a sole owner, proprietorship is represented by a single capital balance. This is the cumulative result of the owner's investments and withdrawals as well as past profits and losses. In the partnership form of organization, proprietorship is composed of separate capital balances reporting the interests of the several owners. While the agreement with respect to profit and loss determines how firm profit and loss is to be divided among individual partners, the capital accounts measure the partners' equities in existing firm assets resulting from partners' investments and withdrawals as well as past profits and losses. Upon partnership liquidation, firm creditors are paid off and all profits and losses from liquidation are distributed to partners in the profit and loss ratio. Remaining assets are then distributed to partners in accordance with their equities as reported by their respective capital accounts.

In the corporation, proprietorship, commonly referred to as *capital*, *stockholders' interest*, or *net worth*, is reported in terms of the sources of this interest, consisting of *paid-in capital* and *earned surplus* or *retained earnings*. Paid-in capital is generally divided into *capital stock* and *paid-in surplus* elements. In certain instances corporate capital includes revaluation surplus balances.

*Capital Stock.* Capital stock outstanding, if it has a par value, is shown on the balance sheet at par. If it is no-par, it is stated at the amount received on its original sale or at some arbitrary value as set by law or as assigned by action of the board of directors of the corporation. When more than a single class of stock has been issued and is outstanding, the stock of each class is reported separately. *Treasury stock*, which is stock issued but subsequently reacquired by the corporation, is a subtraction from the total stock issued or from the sum of capital stock and surplus. The capital stock balance is interpreted as the legal capital or permanent capital of the corporation.

*Paid-In Surplus.* A premium received on the sale of par-value stock or the amount received in excess of the value assigned to no-par stock is shown on the balance sheet as paid-in surplus. Capital contributed other than for shares (the donation of assets, for example) and gains resulting from the sale of treasury stock at amounts in excess of cost also give rise to paid-in surplus. Capital stock and paid-

in surplus balances should be combined so that the full amount of the paid-in capital may be indicated. Sale of stock at less than par calls for the recognition of a capital stock balance at par and a stock discount balance that is reported as a subtraction item in arriving at contributed capital.

*Earned Surplus or Retained Earnings.* The amount of undistributed earnings of past periods is reported as earned surplus or retained earnings. Dividends and losses reduce earned surplus. An excess of dividends and losses over profits results in a negative earned surplus balance called a *deficit*. The earned surplus balance is combined with the invested capital in summarizing the stockholders' interest in the corporation. Portions of earned surplus are frequently classified as *appropriated surplus* to indicate that the earnings are not to be used as a basis for dividends, assets arising from such earnings thus remaining available for the company's own use. Appropriations are commonly designated as *earned surplus reserves* and include such items as reserves for sinking funds, for plant extension, for contingencies, etc. Where appropriations of surplus have been made, earned surplus on the balance sheet consists of an amount representing *Appropriated Earned Surplus* and a balance designated *Unappropriated Earned Surplus* or *Free Surplus*.

*Revaluation Surplus.* When increases in assets as indicated by independent appraisal are recorded in the accounts, such increases in asset values are accompanied by increases in *Revaluation Surplus* or *Appraisal Surplus*. Frequently one finds a *Capital Surplus* balance reported on published statements. This term is used to embrace all surplus other than earned surplus, that is, to include both paid-in and revaluation amounts. Such reporting is unfortunate since use of the catch-all term leaves the reader of the statement uninformed concerning the sources of such proprietorship.

#### **FORM OF THE BALANCE SHEET**

The form of the balance sheet varies in practice. The balance sheet may be prepared in *account form*, assets being reported on the left-hand side and liabilities and proprietorship on the right-hand side. It may also be prepared in *report form*, with assets, liabilities, and proprietorship elements appearing in vertical arrangement.

The order of asset and liability classifications also varies in practice. For example, where emphasis is upon a company's working capital position and liquidity, asset and liability groups, as well as the items within such groups, may be presented in the order of liquidity.

THOMAS,  
BALANCE  
DECEMBER

ASSETS			
Current assets:			
Cash in bank and on hand		\$ 45,500	
Marketable securities (at cost; market value, \$31,500)		30,000	
Accrued interest on notes receivable		250	
Advances to employees		1,250	
Notes receivable, trade debtors*	\$ 15,000		
Accounts receivable	50,000		
	\$ 65,000		
Less: Allowance for bad debts	5,000	60,000	
Inventories (at lower of cost or market)		145,000	
Prepaid expenses:			
Miscellaneous supplies inventories	\$ 3,000		
Unexpired insurance	5,000	8,000	\$290,000
Investments:			
Sinking fund for retirement of bonds			50,000
Plant and equipment:			
	Cost	Allowance for Depreciation	Book Value
Land	\$ 80,000		\$ 80,000
Buildings	150,000	\$ 35,000	115,000
Equipment	100,000	45,000	55,000
	\$330,000	\$ 80,000	250,000
Intangibles:			
Organization costs		\$ 6,500	
Goodwill		18,500	25,000
Deferred charges:			
Unamortized bond discount and expense			5,000
Other assets:			
Advances to officers (noncurrent)			15,000
Total assets			\$635,000

\*The company is contingently liable on customers' notes of \$5,000 that have been discounted

**Classified**

This is the usual presentation for the mercantile unit, and class headings appear as follows:

Current Assets	Current Liabilities
Investments	Long-Term Liabilities
Plant and Equipment	Deferred Credits
Intangibles	Other Liabilities
Deferred Charges	Paid-In Capital
Other Assets	Earned Surplus

A balance sheet in account form with financial data reported in the order of liquidity is illustrated above. When readers of the balance

INC.  
SHEET  
31, 1953

LIABILITIES AND CAPITAL			
LIABILITIES			
Current liabilities			
Notes payable, trade creditors		\$ 14,250	
Accounts payable		37,563	
Customers' accounts with credit balances		750	
Estimated income taxes payable		15,000	
Accrued expenses:			
Salaries and wages	\$ 1,000		
Taxes	1,500	2,500	\$ 70,000
Long-term debt			
3% First mortgage bonds due December 31, 1957			100,000
Deferred credits			
Unearned interest on notes receivable		\$ 500	
Unearned leasehold income		14,500	15,000
Total liabilities			\$ 185,000
CAPITAL			
Paid-in capital			
6% Preferred stock, par \$10, 5,000 shares issued and outstanding	\$ 50,000		
No-par common stock, stated value \$5, 40,000 shares issued and outstanding	200,000		
Paid-in surplus from sale of common stock in excess of stated value	45,000	\$ 295,000	
Earned surplus		155,000	
Total capital			\$450,000
Total liabilities and capital	.....		\$635,000

### Balance Sheet

sheet are concerned primarily with such factors as total plant and the method of financing such plant, and when a satisfactory condition as to solvency is assumed (as in the case of public utilities, for example), the order of presentation may emphasize plant and plant equity amounts in a manner such as the following:

Plant and Equipment	Paid-In Capital
Intangibles	Long-Term Debt
Investments	Other Liabilities
Current Assets	Current Liabilities
Deferred Charges	Deferred Credits
Other Assets	Earned Surplus

When the report form is used, the liability and the proprietorship classifications follow the asset classifications. Liability and proprietorship totals may be added together to form an amount equal to the asset total. In other instances total liabilities are subtracted from total assets, and proprietorship is offered as the difference. A report form that emphasizes the current position and develops a working capital balance has won wide favor in recent years, asset and liability classes being reported in the following order:<sup>1</sup>

THOMAS, INC.  
BALANCE SHEET  
DECEMBER 31, 1953

Current assets		\$290,000
Less: Current liabilities		70,000
Working capital		\$220,000
Add:		
Investments		50,000
Plant and equipment		250,000
Intangibles		25,000
Deferred charges		5,000
Other assets		15,000
		\$565,000
Deduct:		
Long-term debt	\$100,000	
Deferred credits	15,000	115,000
Excess of assets over liabilities		\$450,000
Ownership evidenced by:		
Paid-in capital		\$295,000
Earned surplus		155,000
Total equal to excess of assets over liabilities		<u>\$450,000</u>

**Balance Sheet Developing Working Capital Balance**

Frequently, related balance sheet items are combined so that the balance sheet may be prepared in condensed form. For example, for balance sheet presentation, land, buildings, equipment, and furniture may be reported as a single item; raw materials, goods in process, and finished goods inventories may be combined; and investments may be reported in total. Consolidation of similar items within reasonable limits may actually serve to clarify balance sheet position and data relationships. Supporting detail for individual items, if considered of particular significance or when required by law, may be supplied by means of supplementary schedules accompanying the balance sheet.

Balance sheet data are frequently presented in comparative form. With comparative reports for two or more dates, information is made available concerning the nature and the trend of financial changes taking place within the periods between balance sheets.

<sup>1</sup>Individual assets and liabilities have been omitted in the illustration.

**BALANCE SHEET  
ITEM OFFSETS**

A number of items are frequently reported at certain gross balances that call for the recognition of offset balances in arriving at proper balance sheet valuations. Such offset balances are found in asset, liability, and proprietorship categories. For example, in the case of assets, accounts receivable may be reported at the sum of the customers' accounts less an allowance for bad debts to bring the balance down to the amount estimated to be recoverable; plant and equipment items are usually reported at cost less allowances for depreciation that bring the assets down to the costs yet to be assigned to future periods. In the case of liabilities, estimated discounts to be taken in liquidating accounts payable are sometimes subtracted from accounts payable reported as the sum of trade creditors' balances; bonds payable reacquired by a company but not formally retired are reported as an offset to bonds payable issued. In the case of proprietorship, a discount on capital stock is properly reported as an offset from the capital stock balance at par in arriving at paid-in capital; a deficit is shown as a subtraction from invested capital in arriving at the net stockholders' interest.

It should be observed that the offsets involved above are required in the proper valuation of some particular balance sheet item. The offset procedure, however, is improper if it is applied to an asset and a liability or to an asset and a capital balance even in the event of some relationship between the items. For example, a company may accumulate cash in special funds to discharge certain tax liabilities; but so long as control of the cash is retained and so long as the obligation is still outstanding, the balance sheet should reflect both the asset and the liability. Or a plant may have been purchased, a mortgage note having been issued on the purchase. The business unit has acquired a building and at the same time is obliged to meet the payment requirements of the mortgage. Simply to offset the property and the liability balances and to report the company's equity in the property, even though the property might be subject to foreclosure sale by the creditor upon failure to meet the debt, would be to understate the assets owned by the company as well as the obligations that it must meet. A cash sinking fund may have been accumulated for the purpose of acquiring preferred stock; but until the stock is redeemed, the company continues to control the cash and must meet its responsibilities to holders of the stock. A company may have made advances to certain salesmen and amounts may be owed to others; the company has both a claim against certain individuals and a responsibility to others. A net figure cannot be justified here, just as a net figure cannot be justified for the offset of trade receivables against trade payables.

**BALANCE SHEET  
TERMINOLOGY**

Recent years have witnessed an attempt on the part of the accounting profession to define the terms used in accounting. Attention has also been directed to those terms that have been subject to misinterpretation because of an accounting use that differs from the sense in which they are popularly used. This study has been accompanied by a movement to modify existing practice where such action might contribute to a better understanding of accounting.

*Net Worth and Surplus.* As early as 1941 the American Institute of Accountants raised the question of more informative designations in reporting corporate proprietorship. The use of the heading "net worth" was challenged on the grounds that "a balance sheet does not purport to reflect and could not usefully reflect the value of the enterprise or of equity interests therein." The need for a designation that would emphasize *investment* rather than *value* was recognized. Objection was also made to the use of the term "surplus." The popular meaning for "surplus" is "excess," "overplus," "residue," "that which remains when use or need has been satisfied." "Surplus" as employed in an accounting sense has been used to suggest accumulated earnings, as in *earned surplus*; investment by owners, as in *paid-in surplus*; and unrealized profits resulting from a restatement of assets, as in *revaluation surplus*. In order to clarify the ownership reporting, the Institute Committee on Accounting Procedure in Bulletin No. 39 in 1949 recommended the complete discontinuance of the term "Surplus" and presentation of corporate capital in a manner that would adequately point out the various sources as well as the investment nature of this equity.<sup>1</sup> These aims are to be achieved by the following:

(1) The contributed portion of proprietary capital is to be divided between:

- (a) Capital contributed for or assigned to shares to the extent of their par or stated value.
- (b) Capital contributed for or assigned to shares in excess of such par or stated value (whether as a result of original issue of shares at amounts in excess of their then par or stated value, reduction in par or stated value after issuance, or transactions by the corporation in its own shares), and capital received other than for shares, whether from shareholders or others.

(2) The increase in capital from earnings is to be designated by terms that indicate source, such as *retained income*, *retained earnings*, *accumulated earnings*, or *earnings retained for use in the business*.

(3) Any appreciation reflected in the stockholders' equity is to be

<sup>1</sup>*Accounting Research Bulletin No. 39*, "Discontinuance of the Use of the Term 'Surplus,'" October, 1949 (New York: American Institute of Accountants), pp. 295-298.

designated by such terms as *excess of appraised or fair value of fixed assets over cost* or *appreciation of fixed assets*.

(4) There should be indication of such parts of capital as have been appropriated or are restricted as to withdrawal.

Corporate proprietorship, then, would appear as follows:

Stockholders' equity:

Contributed capital:

Capital assigned to stock, 10,000 shares authorized, issued, and outstanding, par \$10	\$100,000	
Capital received in excess of par value	7,500	
Capital arising from sale of treasury stock	<u>10,000</u>	\$117,500
Retained earnings:		
Appropriated and restricted as to withdrawal	\$ 50,000	
Unappropriated	<u>100,000</u>	150,000
Increase for appreciation of fixed assets		<u>60,000</u>
Total stockholders' equity		\$327,500

*Reserves.* The use of the term "reserves" and classification problems relating to reserves have been subject to special inquiry and challenge. The term "reserve" is popularly interpreted to mean property that is held or retained for some purpose. For accounting purposes, such property would be referred to as a deposit, a temporary investment, or a sinking fund. The reserve designation, however, is employed in the following conflicting senses on the balance sheet:

(1) As a valuation account

Reserve for Bad Debts, which reduces a receivable balance to the estimated amount collectible.

Reserve for Depreciation, which reduces the cost of an asset by the amount already charged to revenues.

(2) As a liability whose amount is uncertain

Reserve for Federal Income Taxes, which indicates the amount of tax estimated to be payable.

Reserve for Damages, which indicates the probable amount payable in a disputed claim.

(3) As an appropriation of earned surplus--

Reserve for Bond Sinking Fund, which represents an appropriation of earnings matching assets that have been segregated and that are to be used for a special purpose.

Reserve for Higher Costs of Plant Replacement, which represents an appropriation of earnings so that an unsegregated or undivided portion of net assets may be retained for future plant replacement.

In 1948 the Committee on Accounting Procedure of the American Institute issued Bulletin No. 34 suggesting the limitation of the reserve designation.<sup>1</sup> It points out that "reserve" is popularly interpreted to

<sup>1</sup>*Accounting Research Bulletin No. 34*, "Recommendation of Committee on Terminology — Use of Term 'Reserve'." October, 1948 (New York: American Institute of Accountants), pp. 271-274.

mean property that is held or retained for some special purpose. Since the generally accepted meaning of the term "reserve" relates only to the accounting use for items in the third class, the Committee recommends that its use be limited to items within this class. The Committee further recommends that asset offsets of the first class be referred to as "Less Estimated Uncollectibles" and "Less Amortization to Date" and that a liability involving an estimate of the second class be reported as "Estimated Liability" or "Liability of Estimated Amount."

The use of "reserve" as a valuation, a liability, and a proprietorship designation is subject to serious criticism. However, a further practice that has been followed in a number of cases, that of listing such diverse reserve elements under a common heading "Reserves" usually reported between the liabilities and the proprietorship sections on the balance sheet, is to be thoroughly condemned. This practice results in a distortion of asset, liability, and capital elements, making necessary a full screening of the reserves and their identification with the appropriate balance sheet section in arriving at a summary of assets and related equities. Further, the use of such titles as "Miscellaneous Reserves," "General Reserves," and "Contingency Reserves" within the reserves section frequently makes identification of the balance sheet element impossible. The American Accounting Association has taken a positive stand on this matter in recommending the following:

The balance sheet should contain no special section for reserves. Each reserve should be identified as (a) a subdivision of retained income, (b) an asset or liability valuation account, or (c) a liability, and the position of the reserve in the balance sheet established accordingly.<sup>1</sup>

Such terms as "net worth," "surplus," and "reserve" are still widely used in practice, although there is significant movement towards acceptance of the recommendations mentioned. Some of the traditional terms are used in the textual illustrations because they are so firmly embedded in practice; however, the authors feel that the recommendations mentioned are worthy of full support and may ultimately find acceptance in practice. It must be pointed out that in communicating the business story, movement towards more readily understood terminology is only one phase of the problem; this trend must be accompanied by educating the reader of the statement to the nature of accounting, the service that it can legitimately perform, the limitations

<sup>1</sup>"*Accounting Concepts and Standards Underlying Corporate Financial Statements*," 1948 Revision (Urbana: American Accounting Association), p. 7.

to which it is subject, and the kind of analysis and interpretation that is called for under these circumstances.

**THE SIMPLIFIED REPORT** Along with the movement towards more descriptive terminology in accounting has come the attempt to improve the manner of presentation of financial data. A number of companies have developed simplified reports that attempt to offer basic financial data in a nontechnical and an explanatory manner. Presentation may compare with standard form, it may take a narrative form, or in some cases it may take a graphic form. The development of original forms by different companies is movement away from an objective of the profession, which is to encourage fundamental uniformity so that statements may be generally comparable. Further, there is a real question as to whether the simplified reports have received more enthusiastic response or have proved to be any more serviceable than reports prepared in the conventional manner.

A variety of different balance sheet forms are found in practice. Several selected statements, including samples of simplified forms, are given in the Appendix of this textbook. These should be studied carefully, for they offer suggestions as to the varied approaches that may be taken in the development of reports summarizing financial status.

## QUESTIONS

1. "From a convenient mechanical device, privately applied to the measurement of the status and results of a business enterprise, it (accounting) has grown into an important medium for the public expression of important facts about our vast and complex commercial and industrial society."

"In America the corporation is the dominant form of enterprise."

Are these two ideas related? Discuss.

2. How would you distinguish between accounting "principles" and accounting "methods"?

3. (a) What is meant by "the matching process"? (b) What is meant by the "cost principle"?

4. Explain the two positions that have been taken in distinguishing items as current and noncurrent. Which position do you support? Why?

5. (a) Give examples of expense prepayments that are properly reported as (1) current items and (2) noncurrent items. What factors govern in the determination of the appropriate classification? (b) Give examples of income prepayments properly reported as (1) current items and (2) noncurrent items. What factors govern here?

6. Browne Liquidators, Inc. insists on reporting the cash surrender value of life insurance on company officials as a current asset in view of its immediate convertibility into cash. Do you support this argument?

7. What major classifications may be applied to (a) assets, (b) liabilities, and (c) proprietorship items? Indicate the nature of the data that is reported within each classification.

8. What two basic sequences may be employed in listing assets, liabilities, and proprietorship on the balance sheet? What factors govern in making a choice between the two?

9. (a) Give an example of (1) an asset offset, (2) a liability offset, and (3) a proprietorship offset. (b) When is offset improperly applied?

10. Give an example of (a) a contingent asset, (b) a contingent liability, and (c) a contingent proprietorship item.

11. Indicate under what circumstances each of the following can be considered noncurrent: (a) cash, (b) receivables, (c) marketable securities, (d) inventories.

12. Distinguish between the following: (a) contingent liabilities and estimated liabilities, (b) capital surplus and appraisal surplus, (c) appropriated surplus and free surplus.

13. (a) What objections are raised to the use of the terms (1) reserve, (2) net worth, and (3) surplus? (b) What suggestions have been made with respect to these terms in attempts to improve reporting?

14. The Belle Corporation asks you to draw up a balance sheet reporting properties at their present market value to be used as a basis for borrowing cash from the bank. (a) Would you support the preparation of such a statement? (b) If you prepare such a statement, how would you obtain information as to present market values of current and noncurrent assets? (c) What special disclosures, if any, would you make on the statement?

## EXERCISES

1. Identify the current assets and the current liabilities within the following list of accounts. In the case of doubtful items, indicate what further information would be required.

- |   |  |
|---|--|
| (a) Cash Sinking Fund for Payment of Bonds    | (g) Reserve for Unclaimed Checks         |
| (b) Supplies Inventory                        | (h) Allowance for Depreciation           |
| (c) Receivables - U. S. Government Contracts  | (i) Accrued Interest on Bonds Payable    |
| (d) Accrued Interest on Long-Term Investments | (j) Dividends Payable on Preferred Stock |
| (e) Treasury Stock                            | (k) Raw Materials Inventory              |
| (f) Retained Earnings                         | (l) Unearned Income                      |

2. State how each of the following items, which appear on the balance sheet of The Howard Company, should be classified:

- |                                     |  |
|-------------------------------------|--|
| (a) Reserve for Patent Amortization | (i) Discount and Expense on Bonds Payable    |
| (b) Reserve for Income Taxes        | (j) Deferred Rental Income                   |
| (c) Reserve for Depletion           | (k) Deficit from Operations                  |
| (d) Reserve for Contingencies       | (l) Advances to Salesmen                     |
| (e) Reserve for Doubtful Accounts   | (m) Customers' accounts with credit balances |
| (f) Reserve for Pension Payments    | (n) Creditors' accounts with debit balances  |
| (g) Marketable Securities           |  |
| (h) Premium on Sale of Stock        |  |

- |   |                            |
|---|----------------------------|
| (o) Cash representing miscellaneous refundable deposits | (s) Treasury Stock         |
| (p) Prepaid Rental Expense                              | (t) Factory Supplies       |
| (q) Accrued Interest on Notes Receivable                | (u) Tools                  |
| (r) Subscription Income Received in Advance             | (v) Postage Stamps         |
|   | (w) Loans to Officers      |
|   | (x) Leasehold Improvements |
|   | (y) Patents                |

3. Indicate how each of the following items should be classified on the balance sheet:

- Expenditure for improvements on land leased for a ten-year period.
- Cash surrender value of life insurance.
- Obligation to insurance company for amount borrowed on insurance policy.
- Sinking fund cash for retirement of bonds.
- Bonds payable in six months out of sinking fund cash.
- Prepaid rental expense for the next twelve months.
- Note receivable collectible in 10 annual installments.
- Customers' notes arising from installment sales and due six months to one year and six months hence.
- Cash deposited with suppliers on merchandise orders.
- Cash deposited with broker on option to buy real estate.
- Land held as future plant site.
- Dividends in arrears on preferred stock.
- Warehouse in process of construction.
- Cash fund representing customers' deposits on returnable containers.
- Cash fund representing sales tax collections.
- Cash fund set aside for new plant construction.
- Bonuses payable to officers.

4. From the following account balances, select the proprietorship items and list them as they should appear on the balance sheet:

Capital stock issued, stated value \$5, 10,000 shares. . . . .	\$ 50,000	Treasury stock, 1,000 shares. . . . .	\$ 5,000
Dividends payable. . . . .	5,000	Reserve for pension pay- ments. . . . .	10,000
Paid-in surplus. . . . .	120,000	Revaluation surplus. . . . .	30,000
Undistributed profits. . . . .	45,000	Reserve for possible future contingencies. . . . .	20,000
Bond sinking fund . . . . .	40,000	Reserve for federal income taxes. . . . .	7,500
Premium on bonds payable . . . . .	10,000		
Goodwill. . . . .	40,000		

### PROBLEMS

1-1. Prepare a properly classified balance sheet for the Ralph Sales Co. from the information that follows as of June 30, 1953:

Accounts Payable. . . . .	\$40,500	Allowance for Depreciation of Buildings. . . . .	\$40,000
Accounts Receivable. . . . .	48,500	Allowance for Depreciation of Machinery and Equip- ment. . . . .	21,000
Accrued Interest on Notes Receivable. . . . .	300	Allowance for Doubtful Notes and Accounts. . . . .	1,600
Advances Received on Un- completed Contracts. . . . .	5,000		

Buildings.....	\$100,000	Notes Payable (due in 1958).....	\$20,000
Cash in Banks.....	18,500	Notes Receivable.....	10,500
Cash on Hand.....	500	Patents.....	15,000
Common Stock, \$10 par...	200,000	Preferred Stock, \$10 par...	100,000
Dividends Receivable.....	150	Premium on Common Stock Issued.....	40,000
Estimated Income Taxes Payable.....	6,000	Raw Materials Inventory..	26,000
Finished Goods Inventory..	19,500	Salaries and Wages Payable	1,500
Goods in Process Inventory	30,000	Serial Bonds Payable (due March 31, 1954).....	5,000
Investment in Subsidiary Company Stocks.....	85,000	Serial Bonds Payable (due in 1955 and thereafter)	90,000
Investment in Undeveloped Properties.....	30,000	Surplus (debit balance)....	59,350
Land.....	50,000	Temporary Investments in Marketable Securities...	15,600
Machinery and Equipment	65,000	Tools.....	6,000
Miscellaneous Accrued Expenses.....	2,100	Unamortized Bond Dis- count and Expense.....	5,200
Miscellaneous Prepaid Ex- penses.....	1,600	Unearned Interest on Notes Receivable.....	400
Miscellaneous Supplies In- ventories.....	2,600	Withholding Taxes Payable	1,200
Notes Payable (short term)	15,000		

1-2. From the following account balances for the Grayson Co. as of December 31, 1953, prepare a balance sheet with information properly classified:

Accounts Payable.....	\$36,500	Goodwill.....	\$25,000
Accounts Receivable.....	77,500	Interest Receivable ..	1,500
Accrued Interest and Property Taxes.....	2,750	Inventories.....	142,000
Accrued Salaries.....	1,400	Land.....	60,000
Allowance for Bad Ac- counts.....	3,000	Land Acquired for Future Building Site.....	35,000
Allowance for Deprecia- tion of Buildings.....	36,000	Notes Payable.....	15,950
Allowance for Deprecia- tion of Equipment.....	12,000	Notes Receivable.....	30,000
Bonds Payable.....	100,000	Paid-In Surplus.....	115,000
Buildings.....	105,000	Preferred Stock, par \$100...	120,000
Cash.....	30,500	Preferred Stock Redemp- tion Fund.....	40,000
Cash Dividends Payable..	16,000	Prepaid Taxes, Insurance, and Interest.....	2,600
Common Stock, Stated Value \$25.....	150,000	Supplies Inventory.....	3,500
Discount on Bonds Payable	5,400	Temporary Investments in Marketable Securities....	24,000
Dividends Receivable.....	1,200	Trade-Marks.....	10,000
Earned Surplus.....	44,800	Treasury Stock, Common, 1,000 shares.....	25,000
Equipment.....	42,000	Unearned Interest on Notes Receivable.....	600
Estimated Income Taxes Payable.....	6,200		

1-3. The following balance sheet is submitted to you for inspection and review. In the course of the review you find the data listed on the following page. Using the balance sheet and the information that follows, prepare a corrected balance sheet with items properly classified.

BALANCE SHEET  
MANNING DISTRIBUTORS

DECEMBER 31, 1953

ASSETS		LIABILITIES AND PROPRIETORSHIP	
Cash . . . . .	\$ 15,000	Accrued expenses	\$ 1,000
Accounts receivable . . . . .	65,000	Loans payable	20,000
Inventories . . . . .	80,000	Accounts payable	65,000
Unexpired insurance . . . . .	3,500	Capital stock	100,000
Plant and equipment . . . . .	115,000	Surplus . . . . .	92,500
			<u>\$278,500</u>

(a) The possibility of bad debt losses on accounts receivable has not been considered. It is estimated that bad debt losses will total \$1,800.

(b) \$15,000 representing the cost of a large-scale advertising campaign completed in 1953 has been added to the inventories, since it is believed that this campaign will benefit sales of 1954. It is also found that inventories include merchandise of \$6,500 received on December 31 that has not yet been recorded as a purchase.

(c) Unexpired insurance consists of \$550, the cost of fire insurance for 1954, and \$2,950, the cash surrender value on officers' life insurance policies.

(d) The books show that plant and equipment has a cost of \$200,000 with depreciation of \$85,000 recognized in prior years. However, these balances include fully depreciated equipment of \$15,000 that has been scrapped and is no longer on hand.

(e) Accrued expenses of \$1,000 represent accrued salaries of \$3,500, less advances of \$2,500 made to company officials.

(f) Loans were made from the bank, the bank charging interest on the loans in advance. The interest was recorded as an expense. On December 31, the prepaid interest on the loans relating to 1954 was \$405.

(g) Tax liabilities not shown are estimated to total \$2,200.

(h) Capital stock consists of 6,000 shares of 4% preferred stock, par \$10, and 8,000 shares of no-par common stock, stated value \$5 per share.

(i) The surplus balance reported on the balance sheet includes paid-in surplus on common stock of \$85,000.

1-4. Marsh and Phillips formed a partnership at the beginning of 1953. The partners invested cash of \$25,000 and \$15,000 respectively and agreed to share profits and losses in the ratio of original investments. During the year merchandise was acquired at a cost of \$60,000, invoices of \$6,500 remaining unpaid on December 31. Sales for the year totaled \$85,000, which was exactly double the cost of the merchandise sold; collections from customers were \$73,500, and the balance of \$11,500 is believed fully collectible. During the year, furniture and fixtures were acquired for cash at a cost of \$8,500; depreciation of this asset for 1953 was calculated as \$850.

At the end of the year accrued expenses for taxes and salaries total \$550. Prepaid expenses consisting of insurance and supplies inventories total \$400. An income statement prepared for the year shows net income of \$6,000 accruing to partners. Marsh and Phillips withdrew \$4,000 and \$1,500 respectively during the year.

*Instructions:* (1) Prepare a balance sheet for the partnership as of December 31, 1953, in classified form and reporting capitals of the individual partners.

(2) Prepare a summary of cash receipts and payments in support of the cash balance reported on the balance sheet.

1-5. The balance sheet that appears below was prepared by the bookkeeper for Forbes and Garver, partners. A review of the books and records discloses the need for a revision of the statement. Using the balance sheet data and the information that follows, prepare a corrected balance sheet with items properly classified.

BALANCE SHEET  
FORBES AND GARVER  
DECEMBER 31, 1953

ASSETS		LIABILITIES AND PROPRIETORSHIP	
Cash .....	\$ 1,250	Sundry liabilities .....	\$ 15,000
Receivables .....	12,500		
Inventories .....	27,000	Net worth .....	37,500
Land and buildings .....	11,750		
	<hr/>		<hr/>
	\$ 52,500		\$ 52,500

(a) The possibility of bad debt losses is not recognized above. It is estimated that bad debts may total \$600.

(b) The inventories balance includes the following:

(1) Merchandise of \$6,000 acquired by the partnership on a consignment basis: the receipt of the merchandise was never recorded as a purchase, since terms of the consignment provide that the merchandise is to be paid for only if sold; if unsold it can be returned.

(2) Miscellaneous supplies inventories valued at \$350.

(c) The balance of land and buildings was determined as follows:

Land .....	\$ 8,500
Buildings .....	14,000
	<hr/>
	\$22,500
Deduct depreciation of buildings to Dec. 31, 1953 .....	250
	<hr/>
	\$22,250
Deduct mortgage on property, \$10,000 and accrued interest, \$500 .....	10,500
	<hr/>
Partners' equity in land and buildings .....	\$11,750

(d) Expense prepayments on the balance sheet date were: taxes, \$25; insurance, \$200.

(e) The sundry liabilities total was developed as follows:

Accounts payable .....	\$14,400
Less creditors' accounts with debit balances resulting from purchases returns and allowances .....	150
	<hr/>
	\$14,250
Accrued salaries .....	400
Accrued taxes .....	350
	<hr/>
	\$15,000

(f) Forbes and Garver had started business on March 1, 1953, agreeing to share profits and losses in the ratio of 3 : 2 respectively. Each partner had invested \$15,000 on the date of organization. Garver had made cash withdrawals of \$3,000 during 1953.

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## **Accounting Statements**

### **The Income and Surplus Statements**

#### **NATURE OF THE INCOME STATEMENT**

The income statement, also variously called the *statement of profit and loss*, the *statement of earnings*, and the *statement of operations*, summarizes revenues and expenses of the period and reports the profit or the loss resulting from the matching process. This statement thus explains the progress of the company and accounts for the changes in the net assets and in proprietorship resulting from profit and loss activities.

The importance of the income measurement function of the income statement cannot be overemphasized. Reference is made to this statement in judging business progress for a period. Reference is also made to this statement in arriving at the value of the property owned by a business, for it is business earnings that validate asset values. Owners, both present and prospective, reach estimates of business worth through analyses of earnings and earning potentials. As earnings go up, a higher value is assigned to the source of such earnings; as earnings shrink, the value of the property shrinks accordingly. The income statement, then, assumes broad importance, not only as a report that is used in the analysis of business success, but also as a complement to the balance sheet in the measurement of business worth.

It has already been suggested that a business unit commences operations in the attempt to increase its net assets, that is, realize profits. Profit emerges from an excess of revenues over expenses. Generally, as a first step in this process, costs are incurred. The sale of goods and services means the acquisition of new assets (or reductions in liabilities) and the realization of revenue. This also calls for the recognition of decreases in assets and increases in costs directly or indirectly related to the revenue recognized. These costs are the *expenses* attaching to revenue in the measurement of income.

Viewed broadly, revenue has been defined by the American Accounting Association in its "Accounting Concepts" to include "... (a) the amount of assets received or liabilities liquidated in the sale of products or services of an enterprise, (b) the gain from sales or exchanges of assets other than stock in trade, and (c) the gain from

advantageous settlements of liabilities.”<sup>1</sup> Revenue would not be considered to arise from investments, changes in the invested capital element, gifts, or the appreciation of assets prior to the realization of such increased values by sale. Expense, in turn, is defined as “. . . the cost of assets or portions thereof deducted from revenue in the measurement of income. These deductions arise through a current expenditure of cash, a total or partial expiration of asset cost, or the incurrence of a liability. Expense consists of operating costs—deductions that have a traceable association with the production of revenue, and losses—deductions that have no such association.”<sup>2</sup> Expense, then, as broadly conceived above, would include: (1) charges directly identified with revenue of the period, as cost of goods sold; (2) charges indirectly identified with revenue of the period, as interest, taxes, or rent; (3) charges which, although not associated with the production of current revenue, are not applicable to revenue of subsequent periods, as losses from fire or flood. Expense would not be considered to result from withdrawals of invested capital or from distributions of retained income under any circumstances.

#### **NATURE OF THE EARNED SURPLUS STATEMENT**

In making available the entire story of activities of the period, there should be an explanation for the change in proprietorship as reflected on beginning and ending balance sheets. The income statement is the vehicle for the revenue and expense summary. The statement of changes in capital in the case of the sole proprietorship and the partnership, and the earned surplus statement in the case of the corporation serve as the proprietorship reconciliation device. In the case of the sole proprietorship or the partnership, statements accounting for proprietorship changes consist of opening capital balances, the changes in such balances resulting from owners' investments and withdrawals, the changes resulting from operations as summarized on the income statement, and any other changes in capital not reflected on the income statement and considered as affecting capital directly. In the case of the corporation, the earned surplus statement reports the opening earned surplus balance, the change in this balance resulting from operations as summarized on the income statement, the changes resulting from profit distributions, and any other changes in earned surplus not reflected on the income statement and considered as affecting proprietorship directly.

<sup>1</sup>“*Accounting Concepts and Standards Underlying Corporate Financial Statements*,” 1948 Revision (Urbana: American Accounting Association), p. 3.

<sup>2</sup>Ibid, p. 4.

**CONTENT OF THE  
INCOME STATEMENT**

The income statement normally consists of a series of items or sections that develop the net income for the period. Such sections include (1) sales (or income from services), (2) cost of goods sold (or expenses of providing services), (3) operating expenses, (4) other income and expenses (financial management income and expenses), and (5) income taxes.

(1) *Sales.* The income from sales reports the total sales to customers for the period. This total should not include additions that may have been made to billings for sales taxes that the business is required to collect on behalf of government. Such billing increase is properly recognized as a current liability. Returns and allowances are subtractions from gross sales. When the sales price is increased to cover the cost of freight to the customer and the customer is billed accordingly, freight charges paid by the company should be considered subtractions from sales in arriving at net sales revenue.

(2) *Cost of Goods Sold.* When merchandise is acquired from outsiders, the cost of goods relating to sales of the period must be determined. Cost of goods available for sale is first determined. This is the sum of the beginning inventory, purchases, and all other buying, freight in, and storage costs relating to acquisitions. Cost of goods sold is calculated by subtracting the amount of merchandise on hand at the end of the period from the amount determined as goods available for sale. When the goods are manufactured by the seller, the cost of goods manufactured must first be calculated. Cost of goods manufactured then takes the place of purchases in the summary just described.

The determination of cost of goods manufactured begins with the cost of goods in process at the beginning of the period. To this is added the cost of materials put into production, the cost of labor applied to material conversions, and all of the other costs for services and facilities utilized in production for the period, including such items as factory superintendence; indirect labor; depreciation and other expenses relating to factory buildings and equipment; factory supplies used; expenses for dies, jigs, and tools; patent amortization; and factory light, heat, and power. The total cost as thus obtained represents the cost of both completed work and uncompleted work still in production. The ending goods in process inventory, then, must be subtracted from this total in arriving at the cost of the product completed and made available for sale.

(3) *Operating Expenses.* Operating expenses embrace (a) selling expenses and (b) general and administrative expenses, and are generally

*reported in the two categories. Selling expenses include such items as salesmen's salaries and commissions and related payroll taxes, advertising and store displays, store supplies used, depreciation of store furniture and equipment, and all expenses relating to the delivery of goods. General and administrative expenses include officers' and office salaries and related payroll taxes, office supplies used, depreciation of office furniture and fixtures, telephone, postage, business licenses and fees, legal and accounting services, contributions, and similar items. Expense items relating to the use of buildings, such as rent, depreciation, taxes, insurance, light, heat, and power, should be allocated in some equitable manner to manufacturing costs and to selling and general and administrative functions. In the case of the trading concern, charges relating to buildings are generally reported in full in the general and administrative category.*

(4) *Other Income and Expenses.* Other income and expenses include items identified with financial management and other miscellaneous current items not related to the central operations. Other income consists of such items as interest income, dividend income, and miscellaneous income from rentals and fees. Cash discounts received on purchases are also generally treated as other income, although there is theoretical support for treating such discounts as a reduction from the purchases balance to which they apply. Other expenses include interest expense and other miscellaneous expenses related to miscellaneous income items shown. Cash discounts allowed on sales are also normally included with other expenses, although such discounts might be properly regarded as a direct subtraction from sales.

(5) *Income Taxes.* The government is a partner in the earnings of the business unit. The share of income representing federal normal, surtax, and excess profits taxes as well as other income taxes is summarized and separately reported.

**THE CURRENT OPERATING PERFORMANCE VS. ALL-INCLUSIVE INCOME STATEMENT**

There is general agreement that there should be a clear distinction on the statements summarizing activities between those charges and credits that are considered normal and recurring and those that are considered extraordinary, nonrecurring, and unpredictable. The latter consist of two classes of items: (1) unusual gains and losses and (2) charges and credits arising from the recognition of errors made in reporting the income of prior periods. There has not been agreement, however, as to how such a distinction should be made. Should the extraordinary items be summarized on the surplus statement, the income statement being limited to a presentation of normally recurring

profit and loss items, or should the income statement summarize both ordinary and extraordinary items? Limitation of the income statement to normally recurring items, referred to as the *current operating performance* statement, is firmly supported by the American Institute of Accountants. The income statement that includes extraordinary items, commonly referred to as the *all-inclusive* statement, has found strong support with the American Accounting Association and the Securities and Exchange Commission. The latter approach is also referred to as the *clean surplus* theory in view of the clearance of all profit and loss data through the income statement.

*The Current Operating Performance Statement.* The current operating performance statement finds its support in the following arguments:

- (1) The income statement should show as clearly as possible what happened and what the company was able to earn under normal conditions of the year so that sound comparisons may be made with similar summaries for prior years as well as with summaries of other companies for the current year.

- (2) Use of the all-inclusive statement may result in unsound judgment and misleading inferences as to the level of sustained earning power, since many users are unable satisfactorily to analyze the statement and eliminate those items that tend to distort results for their purposes. The reader, unfamiliar with the full story behind the items indicated, is less qualified than management and the accountants to determine what items serve to cause misleading inferences with respect to the "basic earning power" of the enterprise.

The American Institute of Accountants has considered the problems arising in the reporting of normal and extraordinary items on the income and surplus statements in four bulletins: Nos. 8, 32, 35, and 41. In Bulletin No. 32, in 1947, the Institute defines "net income" and suggests standards for the determination of extraordinary items that are to be excluded from the net income summary as follows:

... it is the opinion of the committee that there should be a general presumption that all items of profit and loss recognized during the period are to be used in determining the figure reported as net income. The only possible exception to this presumption in any case would be with respect to items which in the aggregate are materially significant in relation to the company's net income and are clearly not identifiable with or do not result from the usual or typical business operations of the period. Thus, only extraordinary items such as the following may be excluded from the determination of net income for the year, and they should be excluded when their inclusion would impair the significance of net income so that misleading inferences might be drawn therefrom:

- (a) Material charges or credits (other than ordinary adjustments of a recurring nature) specifically related to operations of prior years, such as the elimination of unused reserves provided in prior years and adjustments of income taxes for prior years;
- (b) Material charges or credits resulting from unusual sales of assets not acquired for resale and not of the type in which the company generally deals;
- (c) Material losses of a type not usually insured against, such as those resulting from wars, riots, earthquakes and similar calamities or catastrophes except where such losses are a recurrent hazard of the business;
- (d) The write-off of a material amount of intangibles, such as the complete elimination of goodwill or a trademark;
- (e) The write-off of material amounts of unamortized bond discount or premium and bond issue expenses at the time of the retirement or refunding of the debt before maturity.<sup>1</sup>

While distinguishing between net income and extraordinary items, the Institute at this time did not object to the inclusion of extraordinary items on the income statement so long as these were presented at the bottom of the statement following a determination of the net income figure. In Bulletin No. 35, however, released in 1948, the Institute took the stand that an intermediate net income figure and a final income amount on the statement led to misconceptions as to earnings for the period. Accordingly, it recommended that extraordinary items be entirely excluded from the income statement and be summarized on the surplus statement. In 1951, however, as a result of action by the Securities and Exchange Commission challenging this position, the Institute in Bulletin No. 41 modified its stand and accepted once more the presentation of the extraordinary items listed above on the income statement following a determination of net income.

*The All-Inclusive Statement.* Supporters of the all-inclusive statement argue as follows:

(1) A statement purporting to show operating results for a period should offer the full story of activities so that annual statements since the start of the enterprise will offer the total income history for the life of the enterprise. Whether gain or loss is the product of one year or several years, it deserves appropriate recognition on the income statement as a means of evaluating business and management performance. The all-inclusive statement is simple to prepare, is not subject to variations in judgment as to treatment of special items, is easy to understand and less subject to misunderstandings, and can be accepted

<sup>1</sup>*Accounting Research Bulletin No. 32*, "Income and Earned Surplus," December, 1947 (New York: American Institute of Accountants), p. 263.

with confidence as a full report of the administration of business properties. With all of the operating data made available, a reader of the statement can use and adjust such data in a manner appropriate to the nature of his analysis.

(2) The current operating performance statement carries with it a number of difficulties and dangers:

- (a) The reader of the statement untrained in accounting may be unaware of the fact that an income statement can be prepared in a manner incomplete as to activities of the period, and by failing to analyze surplus will not have a full appreciation of current activities as well as the long-run income or earning capacity of the enterprise.
- (b) Permitting the omission of extraordinary items opens the doors to possible manipulation of current earnings by burying significant information in surplus.
- (c) Use of distortion as criteria for the omission of items means the adoption of standards for income normalizing rather than income measurement.
- (d) Differences in judgment will be found with respect to the treatment of borderline cases.
- (e) The establishment of net income in this form carries with it implications as to future earnings. However, the past is only of limited help in forecasting; furthermore, unusual events are a part of the history of the past and should be considered in estimating the future.

Those supporting the all-inclusive statement would generally use the net income designation for the final effect of all of the items given recognition on the income statement.

*Combined Income and Earned Surplus Statement.* The preparation of a combined income and surplus statement has been encouraged as a means of bringing the results of both current operating performance and extraordinary items to the attention of the reader in a single report, while still providing for the classification of the extraordinary items as earned surplus adjustments. Presentation of the two classes of items on the single report offers a current earnings picture plus an appreciation of the modifications of earnings on a long-term basis. The latter items serve to add emphasis to the character of the income report proper as a tentative installment in the long-term story of financial progress. A disadvantage is found in the combined statement in that net income is reported within the body of the statement. In drawing up this statement, special care must be taken to provide clear and descriptive item and total designations.

#### **FORM OF THE INCOME STATEMENT**

Many variations in income statement form are found in practice. Data can be presented in account or report form. The account form reports expenses and losses on the left-hand side of the statement, revenues on the right-hand side,

and the income or the loss as a balancing figure. The data are presented in report form with various groupings of profit and loss data vertically arranged. An illustration of a statement prepared in report form is found on page 37. This statement summarizes extraordinary as well as normal activities and reports net income as the summary of the normally recurring items in accordance with the American Institute view. The grouping of various items in the determination of the following profit measurements should be observed:

Gross profit—the difference between sales and costs related to such sales.  
 Net profit from operations the gross profit on sales less operating expenses.

Net income before income taxes—the net gain on trading activities plus and minus financial management and other miscellaneous expense and income.

Net income after income taxes—the net income less the income taxes.

Increase in earned surplus—the net income after income taxes plus and minus extraordinary gains and losses.

It should be observed that when a portion of the income tax liability accrues as a result of the extraordinary items reported on the income statement, it would be appropriate to allocate the provision for income taxes between the section reporting net income and the section summarizing extraordinary items. The tax return data is necessary in developing an equitable allocation. For illustrative purposes in the text, such allocations are not made, the total tax provision being assigned to the regular activities of the business.

There are some who feel that the various profit figure designations prove a source of confusion to the user of the income statement. The need for such designations is avoided in the single-step form that is sometimes found in practice and is illustrated below:

THOMAS, INC.  
 CONDENSED INCOME STATEMENT  
 FOR YEAR ENDED DECEMBER 31, 1953

Net sales		\$500,000
Other income—interest and purchases discounts		5,000
Extraordinary gains, other increases—gains on sale of securities and overstatement of tax liability at the end of 1952		10,000
		\$515,000
Deduct:		
Cost of goods sold	\$300,000	
Selling expenses	60,000	
General and administrative expenses	90,000	
Other expenses—interest and sales discounts	10,000	
Extraordinary losses, other decreases—loss on sale of equipment and understatement of depreciation in prior years	5,000	
Income taxes	15,000	480,000
Increase in earned surplus		\$ 35,000

Single-Step Income Statement

**THOMAS, INC.**  
**INCOME STATEMENT**  
**FOR YEAR ENDED DECEMBER 31, 1953**

Income from sales:			
Gross sales			\$510,000
Less: Sales returns and allowances			10,000
Net sales			<u>\$500,000</u>
Cost of goods sold:			
Merchandise inventory, January 1, 1953		\$ 40,000	
Add: Merchandise purchases	\$300,000		
Freight in	15,000		
Delivered cost of purchases	<u>\$315,000</u>		
Less: Purchases returns and allowances	5,000	310,000	
Merchandise available for sale		\$350,000	
Deduct: Merchandise inventory, December 31, 1953		50,000	
Cost of goods sold			<u>300,000</u>
Gross profit on sales			<u>\$200,000</u>
Operating expenses:			
Selling expenses:			
Sales salaries	\$ 20,000		
Advertising	15,000		
Depreciation of selling and delivery equipment	5,000		
Miscellaneous selling expense	10,000	\$ 60,000	
General and administrative expenses:			
Officers and office salaries	\$ 45,000		
Taxes, insurance, etc.	20,000		
Miscellaneous supplies used	5,000		
Depreciation of office furniture and fixtures	5,000		
Miscellaneous general expense	15,000	90,000	150,000
Net profit from operations			<u>\$ 50,000</u>
Other income and expenses:			
Other income:			
Purchases discounts	\$ 4,000		
Interest income	1,000	\$ 5,000	
Other expenses:			
Sales discounts	\$ 2,500		
Interest expense	7,500	10,000	
Deduct excess of other expenses over other income			<u>5,000</u>
Net income before income taxes			<u>\$ 45,000</u>
Income taxes			15,000
Net income after income taxes			<u>\$ 30,000</u>
Add: Extraordinary gains, other increases:			
Gain on sale of securities		\$ 4,000	
Overstatement of income tax liability at the end of 1952		6,000	10,000
			<u>\$ 40,000</u>
Deduct: Extraordinary losses, other decreases:			
Loss on sale of equipment		\$ 3,000	
Understatement of depreciation of buildings in prior years		2,000	5,000
Increase in earned surplus			<u><u>\$ 35,000</u></u>

**Income Statement**

Frequently the income statement prepared for stockholders simply reports totals for certain classes of items, such as cost of goods sold, selling expenses, general expenses, other income, other expenses, and other special items. This plan was followed in the single-step statement just given. Additional detail may be provided by means of supporting schedules.

When goods are manufactured by the seller, the cost of goods manufactured must be determined before the cost of goods sold can be found. If this information is made available with the regular reports, it is generally displayed on a separate schedule supporting the income statement because it involves so much detail. Assuming that the goods available for sale were obtained by manufacture rather than by purchase as in the example on page 37, a manufacturing schedule may appear as shown below. The cost of goods sold section of the income statement would then appear as illustrated on the opposite page.

THOMAS, INC.  
MANUFACTURING SCHEDULE  
TO ACCOMPANY INCOME STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Goods in process inventory, January 1, 1953 . . .		\$ 25,000
Raw materials:		
Inventory, January 1, 1953 . . . . .		\$ 30,000
Purchases . . . . .	\$105,000	
Freight in . . . . .	10,000	
	<hr/>	
Delivered cost of raw materials . . . . .	\$115,000	
Less: Returns and allowances . . . . .	5,000	110,000
Total cost of raw materials available for use . . . . .		\$140,000
Less. Inventory, December 31, 1953 . . . . .		40,000
Cost of raw materials consumed . . . . .		100,000
Direct labor . . . . .		140,000
Manufacturing expenses:		
Indirect labor . . . . .		\$ 20,000
Factory superintendence . . . . .		14,500
Depreciation of factory buildings, machinery and equipment . . . . .		12,000
Light, heat and power . . . . .		10,000
Factory supplies used . . . . .		8,500
Miscellaneous factory expense . . . . .		15,000
Total manufacturing expenses . . . . .		80,000
Total goods in process during 1953 . . . . .		<hr/> \$345,000
Deduct: Goods in process inventory, December 31, 1953 . . . . .		35,000
Cost of goods manufactured . . . . .		<hr/> <hr/> \$310,000

**Manufacturing Schedule**

Cost of goods sold:		
Finished goods inventory, January 1, 1953 .....	\$ 40,000	
Add: Cost of goods manufactured per manufacturing schedule .....	310,000	
Merchandise available for sale .....	\$350,000	
Deduct: Finished goods inventory, December 31, 1953.....	50,000	
Cost of goods sold .....		\$300,000

**Cost of Goods Sold Section of Income Statement for a Manufacturing Business**

If desired, simply the cost of goods sold total could be reported on the income statement. A supporting cost of goods sold schedule would summarize the cost of goods manufactured as well as the change in finished goods inventories.

**FORM OF THE EARNED SURPLUS STATEMENT** When the income statement reports extraordinary items, including corrections in profits of prior periods, the earned surplus statement may consist merely of beginning and ending surplus balances reconciled by the increase in earned surplus as reported by the income statement and decreased by the dividends declared for the period. Such a statement is shown below:

THOMAS, INC.  
EARNED SURPLUS STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Earned surplus, January 1, 1953 .....	\$140,000
Add: Earned surplus increase per income statement .....	35,000
	\$175,000
Deduct: Dividends declared during year .....	20,000
Earned surplus, December 31, 1953 .....	\$155,000

**Earned Surplus Statement**

When the income statement is limited to normally recurring items, the earned surplus statement summarizes extraordinary items. The order of presentation of net income, extraordinary gains and losses, corrections in profits of prior periods, and dividend charges on the earned surplus statement varies. In the form that follows, earned surplus for the beginning of the period is first corrected for past errors. Other increases and decreases follow.

THOMAS, INC.  
EARNED SURPLUS STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Balance of earned surplus, January 1, 1953.....		\$140,000
Corrections in earned surplus applicable to previous periods:		
Additions: Overstatement of income tax liability at the end of 1952.....	\$ 6,000	
Deductions: Understatement of depreciation of buildings in prior years .....	2,000	4,000
		<hr/>
Corrected balance of earned surplus at beginning of year .....		\$144,000
Add: Net income after income taxes as reported by income statement.....	\$ 30,000	
Extraordinary gains—gain on sale of securities.....	4,000	34,000
		<hr/>
		\$178,000
Deduct: Dividends declared.....	\$ 20,000	
Extraordinary losses—loss on sale of equipment.....	3,000	23,000
		<hr/>
Balance of earned surplus, December 31, 1953.....		\$155,000

Earned Surplus Statement Summarizing Extraordinary Items

**FORM OF THE COMBINED INCOME AND EARNED SURPLUS STATEMENT** A combined income and earned surplus statement may be prepared in various forms. For example, it would be possible to present net income data followed by the extraordinary items, thus summarizing the earned surplus change from the two sources. This total would be increased by the beginning earned surplus balance, and total surplus would then be reduced by the dividends declared in arriving at the earned surplus balance at the end of the period.

The combined statement could also be prepared in a form as follows:

THOMAS, INC.  
INCOME AND EARNED SURPLUS STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Income from sales:		
<hr/>		
Net income after income taxes.....		\$ 30,000
Add earned surplus, January 1, 1953.....		140,000
		<hr/>
		\$170,000
Add: Extraordinary gains, other increases:		
Gain on sale of securities.....	\$ 4,000	
Overstatement of income tax liability at the end of 1952....	6,000	10,000
		<hr/>
		\$180,000
Deduct: Extraordinary losses, other decreases:		
Loss on sale of equipment.....	\$ 3,000	
Understatement of depreciation of buildings in prior years....	2,000	5,000
		<hr/>
		\$175,000
Deduct dividends declared.....		20,000
		<hr/>
Earned surplus, December 31, 1953.....		\$155,000

Combined Income and Earned Surplus Statement

The foregoing discussion has been limited to ~~the methods~~ of reporting the changes in earned surplus. Separate statements are prepared to reconcile paid-in and revaluation surplus balances when changes in such balances take place during the fiscal period.

**THE SIMPLIFIED  
INCOME STATEMENT**

Some companies depart from the conventional forms of the income statement in the attempt to display profit and loss data in simplified or more popular and readable form. Data are frequently presented in narrative or graphic form to help the reader grasp significant relationships. A variety of different forms for the income statement and surplus summaries, including samples of popular reporting, are included in the Appendix of this textbook.

**CERTAIN BASIC  
CONCEPTS IN THE  
MEASUREMENT PROCESS**

The measurement process and the nature and form of the statements giving expression to this process have been described in the past pages. There are several general assumptions and practices that are considered basic to accounting. These are considered in the following paragraphs.

**OBJECTIVE,  
VERIFIABLE EVIDENCE**

Accounting seeks to present its findings on a foundation of facts determined objectively and subject to verification. Cash receipts and disbursements can be adequately supported by vouchers, and cash on hand is determined by count; full support and verification for this element and its changes are available. Findings here can be fully objective. Purchases of goods and services as well as sales are also generally well supported by evidence and subject to verification. There are a number of areas in accounting, however, where one must develop conclusions based in certain measure upon judgment, estimate, and subjective factors. The recognition of depreciation is an example of the latter. But the degree of estimate can be minimized by the attempt to secure and develop evidence that will lend objective support to conclusions. Objective determinations to the fullest extent possible are encouraged as a means of closing the doors to possible error, bias, or even intentional fraud, thus achieving an accounting deserving of complete confidence.

**THE GOING CONCERN  
ASSUMPTION**

The measurement process is assumed to apply to a going concern. When the future is unpredictable, one can only assume a continuity of existence and a business environment to follow that is similar to ~~that in~~ which the

enterprise finds itself currently. The concept of continuity is support for the preparation of a balance sheet that reports costs that are assignable to future activities rather than realizable values that would attach to properties in the event of liquidation. The concept of continuity calls for the preparation of an income statement that reports only such portions of costs as are allocable to current activities. Obviously, the assumption of a going concern may be invalidated by future experience. Statements, then, should be regarded as of a provisional nature, with support for their conclusions still to be found in the events of the future.

In applying the assumption of continuity, the intent of management frequently requires recognition in problems of valuation and presentation. For example, if it is the policy of management to trade in automotive equipment at three-year intervals even though such equipment might have a materially longer life, the intent of management would govern the allocation of cost. Or if management has taken steps to replace currently maturing bonds with a new issue, the maturing bonds would continue to be reported on the balance sheet as a noncurrent obligation since they would make no claim on current assets. The balance sheet should reveal, however, the evidence in support of the noncurrent classification.

### **THE CONSERVATIVE APPROACH**

Accountants have generally felt that they can serve business best by the adoption of a conservative approach to the measurement of progress and position. The doctrine of conservatism is illustrated in the application of practices such as the following: increases in the values of assets and anticipated gains are normally ignored until realized by means of sale; declines in asset values and anticipated losses, however, normally receive full recognition. Marketable securities, for example, are normally valued at cost or market, whichever is lower. A market value in excess of cost is ignored or shown only parenthetically, recognition of the gain awaiting realization through sale. A decrease in market, however, although not yet suffered through sale, is currently recognized in providing conservative income statement and balance sheet measurements. Again, certain expenditures are charged in full against current revenue despite the probability of future benefits. For example, a large-scale advertising campaign may contribute to future sales; however, in view of the indeterminate character of the contribution, conservatism would suggest no deferral of the expenditure but rather the recognition of the entire amount as expense.

It is agreed that a healthy conservatism as applied to the recogni-

tion of income is fully laudable. However, the deliberate and arbitrary understatement of asset values or overstatement of liabilities simply to achieve a conservative balance sheet is hardly the appropriate application of this concept. There are instances where inventories have been deliberately understated; plant, intangibles, and deferred charges have been reported at nominal amounts; and reserves for possible losses and future contingencies have been established and reported among the liabilities as a means of arriving at conservative appraisals of business worth or business debt-paying ability. Conservatism expressed in this manner results in accounting statements that no longer serve to reflect a revenue-cost matching process. The understatement of inventories in the interests of a conservative current position carries with it an understatement of current income; the current understatement of inventories further results in the understatement of cost of goods sold and the overstatement of net income in the next period. The arbitrary reduction of plant items in the interest of a conservative asset position results in the understatement of depreciation charges in future periods and the overstatement of net incomes; balance sheet conservatism here has been accompanied by a contrary effect on the income statements. The recognition of fictitious liabilities to achieve a conservative capital results in the misrepresentation of financial condition until such balances are canceled; further, if payment of future expenses is applied against such liability balances, incomes of these periods are overstated. Departures from sound measurement procedures to achieve balance sheet conservatism serve to distort net income as well as net asset and proprietorship measurements.

The concept of balance sheet conservatism carries over from an earlier day when the accounting process was considered to be concerned largely with the development and preparation of a statement of financial condition for creditors and owners. The income statement occupied a supporting role by linking successive balance sheets, income measurement being determined by the values assigned to assets. But with a growing recognition of the importance of earnings both as a progress and a value indicator, the income statement has now become the center of attention. With emphasis upon accuracy in earnings measurement, there has come a regard for the balance sheet as "the connecting link between successive income statements and as the vehicle for the distribution of charges and credits between them."<sup>1</sup> Conservatism is now

<sup>1</sup>*Accounting Research Bulletin No. 1*, "General Introduction and Rules Formerly Adopted," September, 1939 (New York: American Institute of Accountants), p. 2.

accepted as a moderating and refining influence to be applied to the matching process as a whole.

**CONSISTENCY**

In view of such variations as the different methods for cost allocation in arriving at depreciation, the different approaches to the pricing of inventories in arriving at cost of goods sold, and the different forms and classifications for the presentation of operating and financial data, methods that are adopted should be consistently employed if there is to be continuity and comparability in the accounting presentations. In analyzing statements one is constantly making conclusions with respect to trends within the enterprise. Such conclusions are distorted, for example, if straight-line depreciation is applied against one year's revenue and output depreciation against revenue of the next year, or if marketable securities are reported under long-term investments in one year and under the current heading in the next.

This is not to suggest that changes in methods are not to be made. A continuing analysis of the business activities as well as changing conditions may suggest changes in accounting methods and presentations that will lead to more informative statements. Such changes should be incorporated in the accounting system and statements. But the statements should be accompanied by a summary of the changes and their effects, where material, so that one can properly interpret current data and relate it to statements of the past. When comparative statements are presented, it would normally be desirable either (1) to restate the statement for the period prior to the change in terms of current reporting so that statements are fully comparable, or (2) to offer the statements in noncomparable form but with a supporting summary indicating the comparable results that would have been obtained if either the old practice or the new had been used consistently.

**FULL DISCLOSURE**

One finds constant reference in accounting literature to the concept of *full disclosure*. It has already been suggested that a great many groups rely on accounting statements as their only source of information concerning the financial progress of an enterprise. The accountant, aware of the needs of these groups, can meet his responsibility to them only by making known all of those facts that are required in reaching informed opinions. These facts are not limited to matters of the past and the present, but, under certain circumstances, include matters relating to the future, either anticipated or actually accomplished. It should be emphasized

that full disclosure calls not only for adequate disclosure of all financial facts but also for the presentation of such facts in a manner that will lead to their proper interpretation. Further, the facts calling for disclosure should be those of a material nature, not simply more detail. Excessive detail, descriptions, and qualifications may only serve to obscure certain significant facts and relationships and thus act as an impairment to the appreciation of the full story. Obviously, the goal of full disclosure will continue to be a product of accounting convention and individual judgment on the part of the accountant.

It may be possible to provide all significant financial information within the body of the accounting statements through the use of descriptive account titles and supporting data developed in parenthetical form. Frequently, however, certain matters can better be handled by means of (1) statement footnotes, (2) special notes to accompany the statements, or (3) inclusion in the auditor's report accompanying the statements. Whenever the data are not included on the face of the statements, the statements should make reference to such supporting material as representing an integral part of current reporting.

Matters that should be recognized and developed in some appropriate manner in telling the full financial story include the following:

- (1) Methods of arriving at cost and valuation bases for marketable securities and inventories.
- (2) Methods of valuation for noncurrent assets, including particulars for any departures from the normal cost and cost allocation procedures.
- (3) Material differences between costs reported on the statements and current market values.
- (4) Hypothecation, pledge, or mortgage of any asset.
- (5) Maturity dates for noncurrent receivables.
- (6) Legal aspects of property reported on the statements but not owned.
- (7) Long-term leases, including particulars with respect to period covered, annual rental schedule, and other significant terms involved in the contracts.
- (8) Purchase commitments outstanding involving material amounts and significant market price fluctuation.
- (9) Policies and procedures employed in consolidating subsidiary companies.
- (10) Particulars as to long-term debt, including amounts authorized and outstanding, maturity date or dates for installment obligations, interest rates, assets securing debt, sinking fund or other requirements, defaults on scheduled sinking fund contributions or principal and interest payments, etc.
- (11) Basis for estimating income tax liabilities, including reference to tax audits, tax settlements, and taxable years under review by taxing authorities.
- (12) Particulars concerning provisions for officer and employee bonus and separation plans.
- (13) Contingent claims, with full analysis of the nature of contingencies, sums of money involved, etc.
- (14) Particulars as to classes of stock issued including par or no-par features; amounts authorized, reacquired, and outstanding; dividend preferences, redemption and liquidation values on senior issues; dividends in arrears on cumulative stock; conversion features; stock purchase options outstanding; etc.

(15) Particulars as to special limitations on the use of surplus as a basis for dividends, including references to legal requirements, contractual agreements with creditor groups, etc.

(16) Methods of income measurement where income is recognized at some time other than at time of sale and on a basis other than the conventional accrual basis.

(17) Major accounting policies with respect to depreciation, depletion, and amortization procedures.

(18) Departures from consistency in methods of valuation and presentation, including the effects of such changes in the development of comparative statement values.

(19) Departures from "generally accepted accounting principles" in the development of the financial summaries.

(20) Contemplated future actions of material significance where supporting evidence is adequate to assume such projects will be consummated, including proposed expansion, financing, reorganization, and liquidation.

(21) Occurrences between the end of the previous period and the date of completion of statements that have a material effect upon the company and are of significance in projecting the financial facts disclosed by the statements into the future. Post-statement disclosures frequently include such items as:

- (a) Financing operations, including funded debt increase or retirement.
- (b) Changes in the capital structure, including stock issuance, retirement, or conversion.
- (c) Major property acquisitions or sales.
- (d) Union negotiations and settlements.
- (e) Legal suits filed, appealed, or settled.
- (f) Death, resignation, and appointment of officers and directors.
- (g) Sales, orders, earnings statistics and trends.
- (h) Action taken by the board of directors on major policy.
- (i) Involuntary conversion of property items.

### **ASSUMPTION OF A STABLE MONETARY UNIT**

Contemporary accounting practice calls for the preparation of statements that reflect the dollars originally identified with the transactions. Fluctuations in the value of money and differences in purchasing power are ignored; the dollar is assumed to represent a stable unit of value, an acceptable yardstick.

With significant price level changes in recent years, accounting measurements are being challenged. It is charged that the balance sheet involves assemblies of dollars of different values and that matching of dollars of different purchasing power on the income statement fails to provide a satisfactory measurement of income.

Suggestions have been made by responsible groups who use the product of accounting as well as by accounting authorities that, in view of marked changes in the price level, accountants must now assume a new major responsibility, that of making available statements reflecting dollars adjusted for purchasing power.<sup>1</sup> Such "com-

<sup>1</sup>Supplementary Statement No. 2, "Price Level Changes and Financial Statements," 1951 (Urbana: American Accounting Association).

mon dollar" statements would offer significant data relating to economic position and progress. They would attempt to report the story behind the dollars. Proponents of common dollar statements fully recognize that the definition of the methods and the procedures for the development of such common dollar statements requires considerable study. They are also fully aware that the conventional accounting statements reflecting historical dollar reporting are so firmly embedded in law, business relationships, and general understanding that these will continue to represent the basic reports and that common dollar reports will assume a position as interpretive supplements.

There is little question as to the usefulness of supplementary statements that will make clear the effect of changing dollar values upon financial position and operating results. It should be observed that some progress has been made in this direction. Modern corporate reporting frequently includes supplementary comments and explanations pointing out in varying manner and degree the nature and limitations of conventional reporting together with the modifications that apply to these data in considering the effects of price changes.

#### **STATEMENT LIMITATIONS**

The framework for modern reporting has been suggested in the first two chapters. An appreciation of what accounting seeks to do also affords an understanding of certain difficulties and limitations identified with this process. In reading accounting statements, one must be aware of the judgment, opinion, and estimate involved in the measurements. One must be familiar with the nature of the values presented and with the need for other approaches to value in using reports for certain specialized purposes. The need for comparative statements in evaluating progress and trend should be recognized. One needs to be aware of the shortcomings and the distortions of a varying standard of measurement - the dollar. Finally, one must recognize that statements fail to give the full story. Certain very real assets never appear on the balance sheet - capable management, the demand for a company's services and products, good management-employee relationships, and other valuable intangibles built up through years of operations. Furthermore, one must look beyond the statements for certain matters explaining operations and affecting the financial position both present and future—the business cycle, war or peace, governmental tax policies, governmental regulatory policies, changes in styles, demands, etc. An appraisal of business position and progress can be obtained only through the intelligent use of basic reports honestly and independently prepared and a full appreciation of the business environment.

## QUESTIONS

1. "There has been a shift from the balance sheet to the income statement as the statement of primary accounting importance." What reasons can you see for the change in emphasis?
2. It has been suggested that the balance sheet is subject to certain "major limitations." It has also been said that the balance sheet has become "a statement of non-homogeneous residuals." (a) Give arguments in favor of each of these contentions. (b) In view of these arguments would you suggest that the importance of the balance sheet be discounted in modern accounting?
3. How would you define (a) revenue, (b) cost, (c) expense?
4. Describe the nature of each of the following: (a) cost of goods manufactured, (b) cost of goods sold, (c) operating expenses, (d) financial management expense, (e) extraordinary losses.
5. How would you distinguish between ordinary items and extraordinary items in profit and loss analysis?
6. What are the arguments for and against use of: (a) the current operating performance income statement? (b) the all-inclusive operating statement?
7. (a) What two opinions are held with respect to net income determination? (b) What classes of items would be excluded in the measurement of net income if American Institute of Accountants recommendations are followed?
8. What are the advantages and the disadvantages that are found in the use of the combined income and earned surplus statement?
9. What are the reasons for seeking objective, verifiable evidence in support of the data to be presented on accounting statements?
10. Describe or define each of the following: (a) clean surplus theory, (b) single-step statement, (c) material items.
11. How does the assumption of a going concern affect (a) the balance sheet and (b) the income statement?
12. Distinguish between the proper application of accounting conservatism and the improper application of this concept. Give reasons in support of your conclusions.
13. (a) What is meant by accounting consistency? (b) Are changes in method ever permissible? (c) How would you develop and present comparative data where changes in accounting methods had been effected?
14. (a) What is meant by the concept of full disclosure? (b) Accounting reports have been criticized as affording insufficient disclosure and as offering too much detail. Are these contentions contradictory? Evaluate.
15. (a) Give five significant items relating to past or current financial matters that might be reported in footnotes or special notes accompanying the statements. (b) Give five significant items relating to prospective financial matters that might be reported in footnotes or special note form. (c) Give five significant post-statement occurrences that might be reported in footnotes or special note form.
16. (a) What is meant by common dollar reports? (b) What advantages are claimed for such reporting? (c) Is such reporting expected to replace conventional procedures?

## EXERCISES

1. Complete the following tabulation by giving the missing amount wherever the letter "x" appears:

	CAPITAL AT BEGINNING OF PERIOD	INVESTMENTS BY PROPRIE- TOR	WITHDRAWALS BY PROPRIE- TOR	CAPITAL AT END OF PERIOD	NET INCOME	NET LOSS
(a)	\$15,000	\$2,000	\$ 500	\$20,000	\$ x	\$
(b)	16,000		3,000	13,500	x	
(c)	20,000	6,000	2,000	18,000		x
(d)	10,000		2,500	x	5,000	
(e)	15,000	x	1,000	22,000	4,500	
(f)	22,000	3,000	x	21,000		2,500
(g)	x	4,000	5,500	27,000		2,000

2. Complete the following tabulation by giving the missing amount wherever the letter "x" appears:

	BEGIN- NING IN- SALES	VEN- TORY	PUR- CHASES	ENDING INVEN- TORY	COST OF GOODS SOLD	GROSS PROFIT	EXPENSES	NET INCOME	NET LOSS
(a)	\$15,000	\$6,000	\$10,000	\$ x	\$9,000	\$ x	\$4,000	\$ x	\$
(b)	x	8,000	10,000	6,000	x	8,000	x		1,000
(c)	14,000	x	6,000	7,000	x	6,000	x	2,000	
(d)	20,000	8,000	x	10,000	x	x	5,000	3,000	

3. List each of the following items as an asset, expense, or extraordinary charge:

- Loss on sale of marketable securities.
- Loss on sale of securities by security dealer.
- Write-off of goodwill and patents in the interest of conservatism.
- Excess profits tax for current year.
- Payments representing organization costs incurred.
- Costs of rehabilitating plant just purchased.
- Cost of grading land for construction.
- Additional federal tax assessment for prior years.
- Landscaping costs upon completion of new building.
- Charges on suits arising from breach of contract.
- Purchase and retirement of bonds outstanding at an amount in excess of their book value.
- Contributions to Community Chest.
- Loss from flood.

4. Give the section of the income statement in which each of the following items is reported:

- Gain on sale of land.
- Purchases discounts earned.
- Loss from bad debts.
- Loss from securities written off as worthless.
- Loss from a strike.
- Income tax refund.
- Loss from inventory price decline.
- Depletion.
- Sales discounts.
- Dividends received on long-term investments.
- Income taxes for current period.
- Charge for understatement of depreciation in prior periods.

5. Indicate which of the following items involves the realization of income:

- (a) Land acquired in 1940 at \$15,000 is now conservatively appraised at \$40,000.
- (b) Capital stock acquired at \$40 per share now has a market value of \$52.
- (c) Timberlands show a growth in timber valued at \$40,000 for the year.
- (d) An addition to a building was self-constructed at a cost of \$3,600 after two offers from private contractors for the work at \$4,650 and \$5,000.
- (e) Certain valuable franchise rights were received from a city for payment of annual licensing fees.
- (f) A customer owing \$4,600, which was delinquent for one year, gave securities valued at \$5,000 in settlement of his obligation.
- (g) Merchandise, cost \$1,000, is sold for \$1,600 with a 50% down payment on a conditional sales contract, title to the merchandise being retained by the seller until the full contract price is collected.
- (h) Cash is received on the sale of gift certificates redeemable in merchandise in the following period.

6. The following accounts, among others, are maintained by The Erman Company. Name the financial statement or schedule and the section in which each account listed below will appear.

Accrued Interest on Notes Payable	Investment in Branch Office
Accrued Interest on Notes Receivable	Investment in Plant Not Being Used
Allowance for Doubtful Accounts	Investment in Stock of Subsidiary Company
Bond Sinking Fund	Leasehold Improvements
Bonds Payable	Loans to Officers
Cash Dividends Payable	Loss from Bad Debts
Cash Overdraft	Loss from Fire
Cash Surrender Value of Life Insurance on Company Officers	Miscellaneous Factory Expense
Claims on U. S. for Income Tax Refunds	Notes Receivable
Deferred Interest Expense	Office Supplies
Deferred Interest Income	Patents
Deposits by Customers on Goods in Process of Manufacture	Petty Cash Fund
Direct Labor	Plant and Equipment
Dividends in Arrears on Preferred Stock	Premium on Capital Stock Issued
Earned Surplus	Prepaid Rental Expense
Estimated Income Taxes Payable	Prepaid Taxes
Finished Goods Inventory (ending)	Purchases Discount
Fund for Pension Payments	Raw Materials Purchases
Gain on Sale of Securities	Reserve for Income Taxes
Goods in Process Inventory (beginning)	Reserve for Pension Payments
Goodwill	Sales Discount
Interest Expense	Shipping Supplies
	Tools
	Treasury Stock
	Unearned Rental Income
	Unissued Stock

7. Mason Manufacturers reports a single figure on the income statement for cost of goods sold. The detail in support of this balance is shown on a separate cost of goods sold schedule. Prepare this schedule from the information that follows:

	JANUARY 1	DECEMBER 31
Raw materials inventory . . . . .	\$50,000	\$ 65,000
Goods in process inventory . . . . .	35,000	35,000
Finished goods inventory . . . . .	40,000	60,000
Raw materials purchases . . . . .		110,000
Direct labor . . . . .		90,000
Manufacturing expenses . . . . .		65,000

8. The information that appears below is to be reflected on the surplus statements of Bailey and Borden, Inc. Prepare earned surplus and paid-in surplus statements.

Earned surplus balance, January 1, 1953 . . . . .	\$46,500
Paid-in surplus balance, January 1, 1953 . . . . .	94,000
Net income for 1953 . . . . .	26,500
Call premium paid on retirement of bonds before maturity (bondholders were paid \$102,000 in paying off bonded debt of \$100,000) . . . . .	2,000
Gain on sale of treasury stock . . . . .	15,000
Dividends paid on capital stock outstanding . . . . .	25,000
Extraordinary loss suffered through fire . . . . .	21,600
Premium received on issue of additional stock . . . . .	6,500
Refund of federal income taxes paid for prior years . . . . .	1,050
Loss on write-off of abandoned building no longer usable . . . . .	14,000
Gift of unimproved land from municipal authority . . . . .	50,000

9. B and B, Inc. shows an earned surplus balance on January 1, 1953, of \$160,000. For 1953, the net income before income taxes was \$40,000, and income taxes were \$15,000. Dividends of \$16,000 were declared during the year. The following extraordinary gains and losses were also recognized during the year:

Gain on sale of long-term investments . . . . .	\$14,000
Refund of tax payments by federal government . . . . .	6,000
Overstatement in depreciation charges of prior years . . . . .	10,000
Fire loss . . . . .	11,000
Loss on trade-in of machinery and equipment . . . . .	4,500
Understatement of accrued expenses at end of 1952 . . . . .	2,000

Assuming that the income statement shows extraordinary items, complete the lower section of this statement, beginning with the item "Net Income before Income Taxes," and prepare an accompanying statement of earned surplus.

10. Using the data in Exercise 9, prepare a surplus statement for B and B, Inc., assuming that extraordinary items are reported on this statement, only normal operations being reported on the income statement.

## PROBLEMS

**2-1.** The following balances are taken from the books of the Purcell Company on December 31, 1953:

Corrections in Profits of		Income Tax Refunds for	
Prior Years: Understate-		Prior Years.....	
ment of Depreciation...	\$ 56,000	Interest Expense.....	\$30,000
Cost of Goods Sold.....	275,000	Interest Income.....	2,150
Dividend Income.....	1,250	Purchases Discounts.....	3,000
Dividends Paid.....	25,000	Sales.....	4,800
General and Admin. Exp..	35,000	Sales Discounts.....	420,500
Income Taxes—1953.....	12,000	Selling Expenses.....	4,200
			80,000

The earned surplus balance on January 1, 1953, was \$76,400.

*Instructions:* (1) Assuming the clean-surplus approach, prepare an income statement and an earned surplus statement for the year ended December 31, 1953.

(2) Assuming that the income statement reports only normally recurring items, prepare an earned surplus statement for the year ended December 31, 1953.

**2-2.** The Strong Co. began operations in 1953 with an earned surplus of \$18,800. Its records for 1953 show the following information:

Dividends Declared.....	\$ 10,500	Purchases.....	\$300,000
Gain on Sale of Land.....	4,500	Purchases Discounts.....	4,400
General and Admin. Exp..	86,600	Sales.....	478,800
Income Taxes, 1953.....	12,000	Sales Discounts.....	3,200
Interest Expense.....	6,000	Sales Returns and Allow-	
Interest Income.....	1,200	ances.....	14,000
Loss from Fire.....	3,600	Selling Expenses.....	62,500

Merchandise Inventory, Jan. 1, 1953, \$115,000; Dec. 31, 1953, \$146,500  
Overstatement of Income Tax Liability at end of 1952, \$1,500

*Instructions:* (1) Prepare a combined statement of income and earned surplus for the year ended December 31, 1953.

(2) Using the same data, prepare an income statement and a separate earned surplus statement, assuming that the income statement reports only normal operations, while extraordinary items and corrections are shown on the surplus statement.

**2-3.** The Armstrong Co. prepares an income statement that summarizes normal operations as well as extraordinary items and corrections in profits of prior periods. The statement is supported by (1) a manufacturing schedule, (2) a selling expense schedule, and (3) a general and administrative expense schedule. Prepare an income statement with supporting schedules and an earned surplus statement for this company using the data for 1953 that is listed below. Earned surplus on January 1, 1953, was \$46,400.

Corrections in profits of prior periods made during 1953:

For understatement of depreciation for the years 1950-1952....	\$1,600
For understatement of income tax liability for 1952.....	3,200
Finished Goods Inventory, Jan. 1, 1953, \$36,500; Dec. 31, 1953...	48,600
Goods in Process Inventory, Jan. 1, 1953, \$21,500; Dec. 31, 1953	26,000
Raw Materials Inventory, Jan. 1, 1953, \$16,000; Dec. 31, 1953...	19,000

Advertising.....	\$ 6,500	Interest Income.....	\$ 650
Delivery Expense.....	12,200	Loss from Bad Debts.....	1,600
Depreciation of Machinery.....	5,600	Misc. Factory Expense.....	6,000
Direct Labor.....	76,000	Misc. General Expense.....	3,200
Dividend Income.....	300	Misc. Selling Expense.....	2,150
Dividends Declared.....	8,500	Officers Salaries.....	15,200
Factory Heat, Light, Power.....	20,100	Office Salaries.....	12,000
Factory Maintenance.....	2,600	Office Supplies Used.....	2,200
Factory Superintendence.....	20,000	Purchases Discounts.....	2,700
Factory Supplies Used.....	4,000	Raw Materials Purchases.....	84,000
Factory Taxes.....	14,000	Raw Materials Returns.....	2,000
Federal Income Taxes, 1953.....	14,500	Sales.....	370,000
Freight In on Raw Materials.....	2,500	Sales Allowances.....	1,600
Gain on Sale of Securities.....	1,500	Sales Discounts.....	4,000
Indirect Labor.....	24,000	Sales Returns.....	3,100
Interest Expense.....	6,200	Sales Salaries.....	25,000

2-4. Data relating to the financial condition and the results from operations for the year ended December 31, 1953, are assembled for Brown-Berry, Inc., as follows:

Cash on Hand and in Bank.....	\$30,750	Allowance for Depreciation of Factory Buildings.....	\$16,000
Notes Receivable.....	8,000	Land.....	40,000
Accounts Receivable.....	36,500	Goodwill.....	15,000
Allowance for Doubtful Notes and Accounts.....	1,200	Patents.....	6,000
Accrued Interest on Notes Receivable.....	150	Bond Discount and Expense.....	4,200
Marketable Securities.....	10,000	Notes Payable.....	4,000
Finished Goods Inventory:		Accounts Payable.....	14,000
January 1, 1953.....	18,500	Estimated Federal Income Taxes Payable.....	22,500
December 31, 1953.....	28,000	Dividends Payable.....	2,750
Goods in Process Inventory:		Accrued Taxes and Interest.....	2,400
January 1, 1953.....	8,000	Long-Term Notes Payable.....	22,000
December 31, 1953.....	19,500	Bonds Payable.....	60,000
Raw Materials Inventory:		Preferred Stock, \$100 par, 500 shares.....	50,000
January 1, 1953.....	10,000	Treasury Stock, Preferred, 100 shares.....	10,000
December 31, 1953.....	14,000	Common Stock, 10,000 shares, \$10 stated value.....	100,000
Prepaid Insurance.....	700	Paid-in Surplus.....	35,000
Factory Supplies Inventory.....	500	Deficit, January 1, 1953.....	22,150
Miscellaneous Supplies In- ventories.....	350	Sales.....	305,150
Miscellaneous Prepaid Ex- penses.....	850	Sales Returns and Allow- ances.....	1,400
Tools.....	6,000	Raw Materials Purchases.....	82,000
Patterns and Dies.....	3,600	Freight In on Raw Materials.....	1,700
Office Equipment.....	4,000	Raw Materials Returns and Allowances.....	1,200
Allowance for Depreciation of Office Equipment.....	1,200	Direct Labor.....	76,000
Machinery and Equipment.....	46,000	Indirect Labor.....	14,000
Allowance for Depreciation of Machinery and Equip- ment.....	18,400	Superintendence.....	12,000
Factory Buildings.....	75,000		

Heat, Light, and Power....	\$8,800	Officers' Salaries.....	\$14,500
Taxes on Buildings and Equipment.....	2,600	Office Salaries.....	4,600
Factory Repairs and Maintenance.....	1,400	Office Supplies Used.....	700
Tools Expense.....	1,750	Loss from Bad Debts.....	1,800
Depreciation of Buildings and Factory Equipment ..	6,500	Miscellaneous General and Administrative Expense ..	5,400
Patents Expense.....	1,000	Discounts Received on Purchases.....	800
Factory Supplies Used ..	2,200	Interest Income.....	300
Miscellaneous Factory Expense.....	4,000	Discounts Granted on Sales	1,600
Advertising ..	6,000	Interest Expense.....	3,600
Sales Salaries and Commissions .....	12,500	Federal Income Tax—1953	22,500
Selling Supplies Used .....	1,000	Gain on Sale of Marketable Securities.....	4,100
Miscellaneous Selling Expense .....	6,200	Overstatement of 1952 Federal Tax Liability.....	600
		Loss on Sale of Equipment	1,600
		Dividends Declared.....	8,000

*Instructions:* Using the data above, prepare:

- (1) A balance sheet.
- (2) An income statement that includes extraordinary items and corrections in profits of prior periods, supported by schedules that show cost of goods manufactured, selling expenses, and general and administrative expenses.
- (3) An earned surplus statement.

**2-5.** The Willis Manufacturing Corporation was organized on January 1, 1953, 10,000 shares of no-par stock being issued in exchange for plant and equipment valued at \$60,000 and cash of \$15,000. Data below summarize activities for the first year of operations:

- (a) Net income for the year was \$12,000.
- (b) Raw materials on hand on December 31 were equal to 25% of raw materials purchased for the year.
- (c) Manufacturing expenses for the year were distributed as follows:
 

Materials used .....	50%
Direct labor.....	30%
Other manufacturing expenses .....	20% (includes depreciation of plant, \$2,500)
- (d) Goods in process remaining in the factory on December 31 were equal to 33 $\frac{1}{3}$ % of the goods finished and transferred to stock.
- (e) Finished goods remaining in stock were equal to 25% of the cost of good sold.
- (f) Operating expenses are 30% of sales.
- (g) Cost of goods sold was one and one-half times the operating expenses total.
- (h) Ninety per cent of sales were collected during the year; the balance was considered collectible in 1954.
- (i) Seventy-five per cent of the raw materials purchased were paid for; there were no expense accruals or prepayments at the end of the year.

*Instructions:* (1) Prepare a balance sheet, an income statement, and a supporting cost of goods manufactured schedule.

(2) Prepare a summary of cash receipts and disbursements to prove the cash balance reported on the balance sheet.

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## The Recording Process

### PHASES OF THE ACCOUNTING PROCESS

The first two chapters described the nature, the form, and the content of the accounting statements, the end product of the accounting function. Attention is now directed to the accounting process that makes possible the preparation of these reports.

The accounting process may be considered to be composed of two parts: (1) the recording phase and (2) the summarizing phase. During the fiscal period it is necessary to engage in a continuing activity—the recording of transactions in the various books of record. At the end of the fiscal period the recorded data are brought up to date and summarized and the accounting reports are prepared. The recording phase is described in this chapter, while the activities that comprise the periodic summary are described in the next chapter. The entire accounting process as applied to a particular business unit is then illustrated in Chapter 5.

### RECORDING TRANSACTIONS

Accurate statements can be prepared only if transactions have been properly recorded. A transaction is an action that results in a change in the assets, the liabilities, or the proprietorship of a business. There are two general classes of transactions that require accounting recognition: (1) *business transactions*, that is, transactions entered into with outsiders; and (2) *internal transactions*, that is, accountable transfers of costs within the business. Among the latter, for example, are the transfers of costs from raw materials to goods in process and from goods in process to finished goods in manufacturing activities.

### BOOKKEEPING SYSTEMS

The bookkeeping records of a business consist of: (1) the original documents evidencing the transactions, called *business papers* or *vouchers*; (2) the media for classifying and recording the transactions, known as the *books of original entry* or *journals*; and (3) the media for summarizing the effects of transactions upon individual asset, liability, and proprietorship items, known as the *ledgers* or *ledger records*. The bookkeeping records of the business are referred to as its *bookkeeping system*. The various

recording routines in such a system are developed to meet the special demands of the business unit with particular regard to its size and the nature of its activities. Recording mechanisms and processes must be designed to serve adequately and efficiently in telling the story of the business.

**BUSINESS PAPERS**

A business paper or voucher is prepared as a first record for each transaction. Such a document offers detailed information concerning the transaction and also fixes responsibility for such information by naming the parties identified with the transaction. The business papers are support for the information that is to be recorded in the books of original entry. Copies of sales invoices or the cash register tapes, for example, are the evidence in support of the sales record; purchases invoices support the purchases or invoice record; debit and credit memorandums support adjustments in debtor and creditor balances; check stubs or duplicate checks provide data concerning cash disbursements; duplicates of receipts issued show cash collections; the corporation minute book supports entries authorized by action of the board of directors; journal vouchers or summaries prepared or approved by appropriate officers are used in support of certain data such as adjustments or corrections that are to be reflected in the accounts.

**BOOKS OF  
ORIGINAL RECORD**

Transactions are analyzed from the information provided on the business papers. They may then be recorded in chronological order in the appropriate books of original entry. Transactions are analyzed in terms of accounts to be maintained for (1) assets, (2) liabilities, (3) proprietorship, (4) income and gains, and (5) expenses and losses. Classes (4) and (5) are temporary proprietorship accounts summarizing profit and loss data for the current period. The analysis is expressed in terms of *debit* and *credit*. Asset, expense, and loss accounts have left-hand or debit balances and are decreased by entries on the right-hand or credit side. Liabilities, proprietorship, income, and gain accounts have credit balances and are decreased by entries on the debit side.

While it would be possible to record every transaction in a single book of original entry, this is hardly ever done. Whenever a number of transactions of the same character take place, special journals may be designed in which such transactions can be conveniently entered and summarized. Special journals include sales journals, purchases journals, cash receipts and disbursements journals, the voucher register, and various other books of original entry designed to summarize

special groups of transactions. Regardless of the number and the nature of the special books of original entry, there are always certain entries that cannot be made in the special journals, and these are recorded in the general journal.

A number of special columns may be provided in the various journals adopted. Special columns facilitate the recording of transactions and also serve to summarize the effects of a number of transactions upon individual account balances. This simplifies the subsequent transfer of information from the books of original entry.

### **ACCOUNTS AND THE LEDGER**

Information as reported on a business paper and analyzed, classified, and summarized in terms of debits and credits in the books of original entry is transferred to accounts in the ledger. The accounts summarize the full effects of the transactions upon property and property equities and are used as a basis for the preparation of the accounting statements.

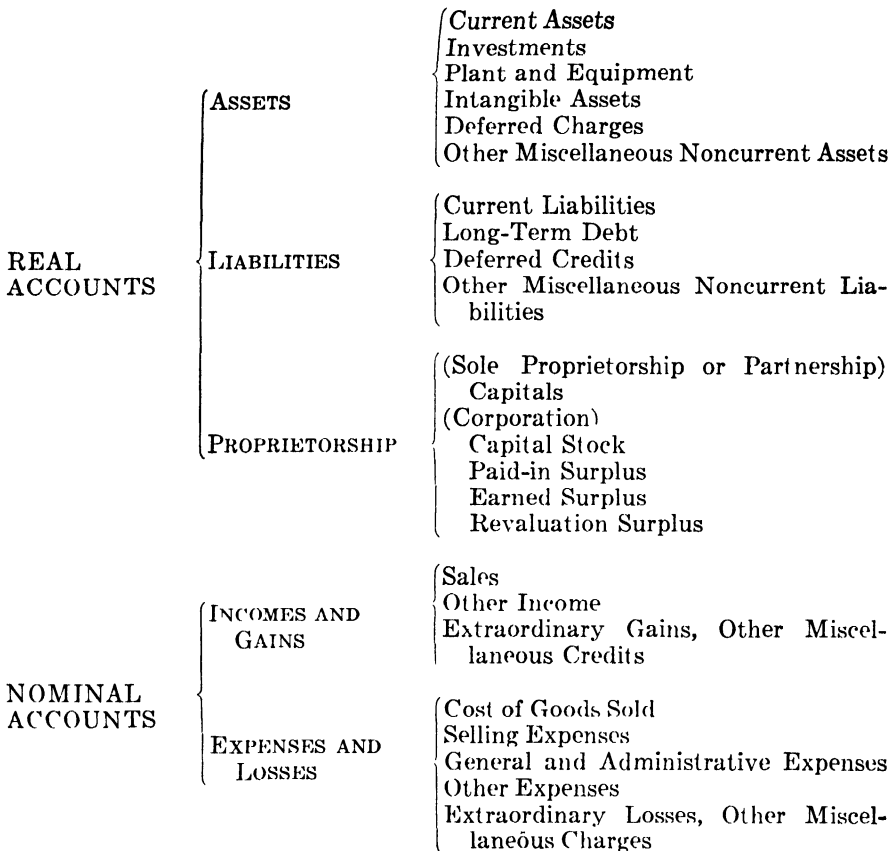
Accounts are sometimes referred to as *real accounts* and *nominal accounts*. The balance sheet accounts are known as the real accounts; the profit and loss or temporary proprietorship accounts are called nominal accounts. When during the course of the accounting period a balance sheet or a profit and loss account balance represents both real and nominal elements, it may be described as a *mixed account*. The store supplies account, for example, may be considered as composed of two elements: (1) a portion representing the store supplies used, and (2) a portion representing the store supplies still on hand. There is no need to analyze mixed accounts for the real and the nominal elements until the end of the period when profit and loss is summarized. At this time the mixed accounts are adjusted so that they may represent wholly real or wholly nominal elements. The classification of real and nominal accounts is shown on page 58.

When accounts are set up to record subtractions from related accounts reporting positive balances, such accounts are termed *offset*, *contra*, or *negative accounts*. Allowance for Bad Debts is an offset to Accounts Receivable and is a negative asset account. Treasury Stock is an offset to Capital Stock and is a negative proprietorship account. Sales Returns is an offset to Sales and is a negative income account.

Accounts are commonly set up in the ledger in *T form* or in *balance form*. The two forms are illustrated on page 59. The balance form is more widely used in modern practice.

The individual real and nominal accounts of each business unit vary, depending upon the nature of the business, its properties and activities, and the information and the detail provided on the account-

## Classes of Accounts



ing statements. It is often desirable to establish separate ledgers for detailed information in support of balance sheet or profit and loss items. The *general ledger* then carries summaries of all of the statement items, while separate *subsidiary ledgers* afford additional detail in support of general ledger balances. For example, a single accounts receivable account is usually carried in the general ledger, and individual customers' accounts are shown in a subsidiary *accounts receivable ledger*; a single accounts payable account is usually carried in the general ledger and is supported by individual creditors' accounts in a subsidiary *accounts payable ledger*; a single plant and equipment account may be supported by individual fixed asset accounts in a subsidiary *plant ledger*; the capital stock account is normally supported by individual stockholders' accounts in a subsidiary *stockholders ledger*; selling and general and administrative expenses may be summarized in a single account in the general ledger, individual expenses

CASH						Account No.			
DATE		ITEMS	POST REF	DEBIT AMOUNT	DATE		ITEMS	POST REF	CREDIT AMOUNT
1953					1953				
Jan.	1	Balance	✓	4,000 00	Jan.	31		CP12	6,000 00
	31		CR9	7,500 00		31	Balance	✓	5,500 00
		5,500.00		11,000 00					
				11,500 00					11,500 00
Feb.	1	Balance	✓	5,500 00					

Ledger Account, T Form

CASH				Account No 1			
DATE		ITEMS	POST REF	DEBIT	CREDIT	DEBIT BALANCE	CREDIT BALANCE
1953							
Jan.	1	Balance	✓	4,000 00		4,000 00	
	31		CR9	7,500 00		11,500 00	
	31		CP12		6,000 00		5,500 00

Ledger Account, Balance Form

being carried in a subsidiary *expense ledger*. The account in the general ledger that summarizes the detailed information reported elsewhere is known as a *controlling account*.

Whenever possible, individual postings to subsidiary accounts are made directly from the business paper evidencing the transaction. This practice saves time. It also avoids possible inaccuracies that may arise if information is first summarized separately and such summaries are then used as a basis for entries to the subsidiary accounts. A business paper also provides the basis for the journal entry that authorizes the postings to the controlling account in the general ledger. In many instances business papers themselves are used to represent a book of original entry. When this is done, business papers are assembled and summarized, and the summaries are transferred directly to the appropriate controlling accounts as well as to the other accounts affected in the general ledger. Whatever the procedure may be, if postings to the subsidiary records and to the controlling accounts are completed accurately, the sum of the detail in a subsidiary record will agree with the balance as reported in the controlling account. Such a reconciliation of each controlling account and its subsidiary record is made periodically, and any discrepancies disclosed through such comparisons are investigated and corrected.

The use of subsidiary records results in a number of advantages: (1) the number of accounts in the general ledger is reduced, thus making the general ledger more useful as a basis for preparing reports; (2) errors in the general ledger are minimized because of fewer accounts and fewer postings; (3) the accuracy of the posting to a large number of subsidiary accounts may be tested by comparing the total of the balances of the accounts with the balance of one account in the general ledger; (4) totals relating to various items are readily obtained; (5) specialization of bookkeeping duties and individual bookkeeping responsibilities are made possible; and (6) daily posting is facilitated for accounts that must be kept up to date, such as customer and creditor accounts.

Those procedures relating to the recording process that are commonly found in practice are discussed in the remaining pages of this chapter.

### RECORDS FOR SALES AND CASH RECEIPTS

When sales are made on account, the number of such sales is ordinarily large enough to warrant the use of a special sales journal. Sales on account result in subsequent collections on account, and a special journal for cash receipts facilitates the recording of such remittances as well as cash receipts from other sources. Both the particular factors relating to sales and those relating to the receipt of cash must be considered carefully in the development of a set of complementary journals. Several special journal forms are illustrated here to suggest the possibilities in special journal construction, design, and use.

A sales journal and a cash receipts journal may take the following form:

SALES JOURNAL

Page 37

DATE	No. of SALE	ACCOUNT DEBITED	Post R11	AMOUNT
1953 Dec.	1 1456	L. S. Carter	√	456 00
	1 1457	T. W. Wallace		138 55
	1 1458	A. M. Boyle		316 78
	1 1459	C. Y. Young		39 40
<hr/>				
	30 1613	B. F. Mver		212 80
	31 1614	C. D. Drake		61 33
	31 1615	P. O. Powell	√	27 60
				—
	31	Accounts Receivable Dr. — Sales Cr.	116/41	6,318 20

## CASH RECEIPTS JOURNAL

Page

DATE	ACCOUNT CREDITED	POST REF.	GENERAL CR	SALES CR	ACCOUNTS RECEIVABLE CR	SALES DISCOUNT DR.	CASH DR
1953 Dec.	1 Notes Receivable	113	2,000 00				
	Interest Income	72	120 00				2,120 00
	1 R. C. Cole	✓			640 00	12 80	627 20
	1 Sales	✓		512 40			512 40
<hr/>							
	31 Notes Payable	211	5,000 00				5,000 00
	31 Sales	✓		660 15			660 15
	31 Totals	✓	12,656 10	15,380 20	5,418 12	93 00	33,361 42
			(✓)	(41)	(116)	(81)	(111)

The pertinent details with respect to each sale on account are entered on a single line in the sales journal. Debits to the individual accounts in the accounts receivable ledger are posted frequently, preferably daily. The accounts in the accounts receivable ledger are arranged alphabetically and are not numbered; therefore, when the debits to the individual accounts in the accounts receivable ledger are posted from the sales journal, a check mark is placed in the Posting Reference column of that journal to indicate that the posting has been completed.

In some instances it is more convenient to post to the accounts receivable ledger directly from duplicate copies of sales invoices. When this plan is followed, a check mark is placed in the Posting Reference column of the sales journal at the time each sale is entered to show that, so far as this journal is concerned, the entry is complete and the item is not to be posted.

When daily sales on account are numerous, copies of the sales invoices for the day may be assembled and totaled, and the total sales on account for the day may be entered on a single line in the sales journal. When this plan is followed, postings to the individual accounts in the accounts receivable ledger are made from the duplicate sales invoices.

At the end of the month the total in the Amount column of the sales journal is posted to the general ledger as a debit to Accounts Receivable and as a credit to Sales. The account numbers to which postings are made are indicated in the Posting Reference column of the journal. The debit to the accounts receivable controlling account will agree with the sum of the debits to subsidiary accounts during the month if individual postings have been properly made.

All cash receipts are recorded in the cash receipts journal. The net amount of cash received is entered in the Cash Debit column, other debits and credits being entered in the other columns provided. Cash sales for each day are summarized and recorded on a single line, the cash sales total being recorded in the Sales Credit column. Reductions in accounts receivable resulting from cash receipts are entered in the Accounts Receivable Credit column, and cash discounts allowed on the collections are recorded in the Sales Discount Debit column. All receipts of cash resulting in credits to accounts other than Sales or Accounts Receivable are entered separately; the name of the account credited is written in the Account Credited column and the amount of the credit is entered in the General Credit column.

Credits to the individual customers' accounts in the subsidiary accounts receivable ledger may be posted from the cash receipts journal. The completion of the posting is then indicated in the Posting Reference column of the cash receipts journal by a check mark. When there are numerous cash receipts daily, a list of the cash receipts for the day may be prepared and totaled, and the total cash received from customers for the day may be entered on a single line in the cash receipts journal. The posting to the customers' accounts is then completed from the separate list of cash receipts.

Credits in the General Credit column are posted individually to the accounts in the general ledger. At the end of the month the amount columns of the cash receipts journal are totaled and the totals of the special columns are posted; Sales is credited, Accounts Receivable is credited, Sales Discount is debited, and Cash is debited. The credit to Accounts Receivable will agree with the sum of the credits to subsidiary accounts made during the month if individual postings have been properly made. The balance in the controlling account after posting both debits and credits at the end of the month is compared with the sum of the account balances in the accounts receivable ledger in proving the accuracy of the controlling account balance and the supporting detail in the subsidiary ledger.

Postings of individual amounts in the General Credit column are indicated by writing the account number in the Posting Reference column of the cash receipts journal. The posting of a column total is indicated by writing the account number in parentheses immediately below the total. When the individual items are not posted because they are included in a total to be posted, or when a total is not posted because the individual items are posted, a check mark may be used to show that posting is not required.

More elaborate sales and cash receipts journals may be designed to meet special requirements. To illustrate, assume that (1) sales are to be distinguished as regular or installment sales, (2) receivables are to be distinguished as regular accounts or installment contracts, (3) all sales including cash sales are to be reflected in the sales journal, and (4) a state sales tax charge is made on all sales. Special journals to meet the foregoing conditions follow:

SALES JOURNAL

Page 8'

CASH Dr	INSTALL- MENT CONTRACTS REC Dr	ACCTS REC Dr	SALES No	DATE	ACCOUNT DEBITED	P R	SALES CR	INSTALL- MENT SALES CR	SALES TAXES PAYABLE CR
	315 00		1293	Dec 1	R. A. Wyhe	√		300 00	15 00
		66 9	1294	1	S. M. Scott	√	65 00		1 95
413 67				1	Cash Sales	√	401 10		12 57
371 40				31	Cash Sales	√	360 20		11 20
12,381 06	4,799 80	4,441 46		31	Totals	√	16,320 56	4,660 00	641 76
(√)	(115)	(116)					(41)	(42)	(216)

CASH RECEIPTS JOURNAL

Page 89

SALES DISCOUNT Dr	CASH Dr	DATE	ACCOUNT CREDITED	P R	CHG CR	SALES CR	INSTALL- MENT CONTRACTS REC Cr	ACCTS REC CR
1 10	53 90	1953 Dec 1	A. M. Nelson	√				55 00
	70 00	1	R. Jennings	√				70 00
	78 75	1	R. A. Wyhe	√			78 75	
	16 00	1	A. C. Wilson	√			16 00	
	757 50	1	Notes Receivable	113	750 00			
			Interest Income	72	7 50			
	413 67	1	Sales	√		413 67		
	371 40	31	Sales	√		371 40		
13 04	21,460 16	31	Totals	√	2,375 00	12,381 06	3,105 04	3,612 10
(81)	(111)				(√)	(√)	(115)	(116)

Each sale is entered in the sales journal, provision being made for distinguishing between charges to installment contracts and regular accounts as well as credits to the installment sales account and the regular sales account. When there are a number of such sales daily,

it is possible to record total sales on account and total sales on the installment contract basis daily, charges to the two subsidiary ledgers being made directly from the supporting vouchers. Cash sales are also recorded in the sales journal, total sales from all sources thus being reported in this record. In the sales journal, cash and receivable columns report total receipts and charges, sales columns report the net sales price, and the Sales Taxes Payable Credit column summarizes tax charges on sales, payable to the state by the retailer.

The cash receipts journal provides for a distinction between collections on installment contracts and regular accounts. Here, too, collections for the day on each of these receivables may be summarized and entered in total, individual credits to the subsidiary ledgers being made directly from business vouchers. A General Credit column shows those credits for which special columns are not provided.

Since cash sales are recorded in both the sales journal and the cash receipts journal, complete posting from both sources would result in duplication. To avoid such duplication, the Cash Debit column in the sales journal is checked and the Sales Credit column in the cash receipts journal is checked. The total cash received is recorded in the cash receipts journal and is posted from this source; total sales are recorded in the sales journal and are posted from this source. Postings at the end of the month, then, result in the following charges and credits:

		Dr.	Cr.
From Sales Journal:	Installment Contracts Receivable...	\$ 4,799.80	
	Accounts Receivable.....	4,441.46	
	Sales.....		\$16,320.56
	Installment Sales.....		4,660.00
	Sales Taxes Payable.....		641.76
From Cash Receipts Journal:	Sales Discounts.....	13.04	
	Cash.....	21,460.16	
	Notes Receivable.....		750.00
	Interest Income.....		7.50
	Other General Credits (Dec. 2-31 not shown).....		1,617.50
	Installment Contracts Receivable...		3,105.04
	Accounts Receivable.....		3,612.10
		\$30,714.46	\$30,714.46

The journals just given differ from preceding illustrations in that special columns are provided on both the right and the left sides of each form. Originality may be exercised in designing special journals to serve adequately and efficiently as classifying and summarizing mediums.

**RECORDS FOR  
PURCHASES AND  
CASH PAYMENTS**

Normally, purchases and cash payments are summarized in special books of original entry. As in previous illustrations, forms vary depending upon the individual requirements of the particular business. Purchases and cash payments journals may take the following form:

PURCHASES JOURNAL

PAGE 12

DATE OF ENTRY	DATE IN INVOICE	INVOICE NO.	ACCOUNT CREDITED	POST REF.	AMOUNT
1953	1953				
Dec 1	Nov 30	466	J R Kirby	✓	456 10
1	Dec 1	467	Brant & Lake	✓	101 33
31	30	493	Loy Manufacturing Co	✓	215 00
31			Purchases Dr    Accounts Payable Cr	51/213	13,164 60

CASH PAYMENTS JOURNAL

Page 13

DATE	Ck NO.	DESCRIPTION	DEBIT	CREDIT	SALES TAXES	EXPENSES	PUR DIS	CASH
			Dr	Cr	Dr	Dr	Cr	Cr
1953								
Dec	1 415	L M Roberts	✓		450 00		9 00	441 00
	1 416	Office Equip	122	404 00				404 00
	1 417	Notes Payable	211	2,000 00				
		Interest Expense	61			60 00		2,060 00
	1 418	Rent	61			650 00		650 00
31	472 9	Payroll	61			816 00		
		Employees Inc						
		Taxes Pay	214	52 20				
		O A B Taxes						
		Payable	215	12 28				
		Hospital Care						
		Payable	216	11 25				710 27
31		Totals	✓	6,054 10	505 60	12,210 20	9,950 50	27,589 04
			(✓)	(✓)	(213)	(✓)	(71)	(111)

In the foregoing illustrations it is assumed that the purchases journal is limited to a record of merchandise purchases. Further, it is assumed that all daily receipts of cash are deposited in the bank and all cash disbursements are made by means of checks with the exception of relatively small payments that are made from a separate petty cash fund. The cash payments journal, then, summarizes all checks written.

The cash journals may be used as a check against the bank record of cash.

The pertinent details with respect to each purchase on account are entered on a single line in the purchases journal. When credits to the individual accounts in the accounts payable ledger are posted from the purchases journal, a check mark is placed in the Posting Reference column of that journal to indicate that the posting has been completed.

In some instances it is more convenient to post to the accounts payable ledger directly from duplicate copies of purchases invoices. When this plan is followed, a check mark is placed in the Posting Reference column of the purchases journal at the time each purchase is entered to show that, so far as this journal is concerned, the entry is complete and the item is not to be posted.

When daily purchases on account are numerous, copies of the purchases invoices for the day may be assembled and totaled, and the total purchases on account for the day may be entered on a single line in the purchases journal. When this plan is followed, postings to the individual accounts in the accounts payable ledger are made from the purchases invoices.

At the end of the month the total in the Amount column of the purchases journal is posted to the general ledger as a debit to Purchases and a credit to Accounts Payable.

All payments by check are recorded in the cash payments journal, the net amount paid being recorded in the Cash Credit column and other debits and credits being recorded in the special columns provided. Reductions in accounts payable resulting from cash payments are entered in the Accounts Payable Debit column, and cash discounts received on the payments are recorded in the Purchases Discount Credit column. Debits to the individual creditors' accounts in the

## EXPENSES — SUB-ACCOUNTS

SALES SALARIES AND COMMISSIONS	ADVERTISING	MISC SELLING EXPENSES	GEN. AND ADMINISTRATIVE SALARIES	SUPPLIES	RENT	TAXES	MISC GENERAL EXPENSES	
		8 50			650 00		8 50	1
								2
						300 00		3
								4
556 00			260 00					39
3,060 50	1,250 00	460 05	2,150 40	360 00	650 00	1,200 00	657 55	40

subsidiary accounts payable ledger may be posted from the cash payments journal, or the posting may be made directly from duplicate copies of the checks or from the check stubs.

The charges to expenses are reported in the Expenses Debit column. When this procedure is followed, a special analysis ledger form may be used in the general ledger to summarize individual expense charges. Such a form may be designed as illustrated across the double page below.

The last three columns on the right side of the form represent a balance form of ledger account. The left side of the form consists of analysis columns that explain the nature of the charges summarized in the control section at the right. Copies of checks issued or check stubs, together with copies of the paid invoices, are used in posting analysis detail. At the end of the month the analysis columns are added and proved against the total in the Debit Balance column. Additional analysis columns can be inserted on the left-hand side of the form as required.

In making payments to employees, the employer is required to withhold amounts for federal income tax, federal old-age insurance benefits, and in some cases for state income tax, state unemployment insurance, hospital care, group insurance, union dues, U. S. bond purchases, etc. The amounts withheld represent payables to the required agencies by the employer on behalf of his employees in accordance with the law or the agreement between employer and employee. When the entry is made in the cash payments journal to record the payment of the payroll, the total of the payroll is entered in the Expenses Debit column, the amount actually paid is entered in the Cash Credit column, and the various amounts withheld are entered in the General Credit column.

## EXPENSES --- CONTROL

Account No. 61

INTEREST EXPENSE	DATE	ITEMS	POST. REF.	DEBIT	CREDIT	DEBIT BALANCE
60 00	1953 Dec.	1 Interest on note	Ck. #417	60 00		60 00
		1 Rent for December	#418	650 00		710 00
		1 Miscellaneous repairs	#425	17 00		727 00
		2 Licenses and taxes	#426	300 00		1,027 00
<hr/>						
	31	Payroll	#472-479	816 00		9,950 50
162 00	31	Totals	✓			

As the entries in the General columns and the Expenses Debit column of the cash payments journal are posted individually, check marks are placed below these columns to show that the totals are not to be posted. The other column totals are posted, the posting being indicated by the account numbers in parentheses immediately below each total. As a check on the accuracy of the posting to the expenses control account, the total of the Expenses Debit column of the cash payments journal may be compared with the total of the Debit Balance column of the account.

Ordinarily, a separate payroll record is desirable in accumulating payroll information. A form similar to the following provides the required detail:

PAYROLL RECORD FOR WEEK OF DECEMBER 25-31

NAME	No. of EMPLOYEES	TIME IN HRS.		REGU- LAR RATE	COM- MIS- SIONS	TOTAL EARNED	DEDUCTIONS			NET PAY		ACCOUNT CHARGED	
		REGU- LAR	OVER- TIME				IN- COME TAX	O A B	OTHER	AMOUNT	Ck No	SALES SAL & COMM	GEN & ADMIN SAL
J. Benson	2			\$60/wk	26 00	86 00	12 30	1 20		72 11	17	86 00	
V. Dosselt	2			\$60/wk	14 00	74 00	9 90	1 11	37.00	59 21	473	74 00	
A. Ernst	3	40	14	\$1.20/hr		74 20	6 90	1 10		65 20	471	5 20	18 00
<hr/>													
C. Oliver	-			\$ 5/wk		0 00	6 00	83		48 17	173		55 00
						816 00	82 20	12 28	112.00	710 27		260 00	260 00

OTHER DEDUCTIONS GI—Group Insurance HC—Hospital Care SB—Savings Bonds UD—Union Dues

It would be possible to use the payroll record as a book of original entry instead of a supplementary record, columnar totals being posted from this record as follows:

	DEBITS	CREDITS
Sales Salaries and Commissions	556 00	
General and Administrative Salaries	260 00	
Employees Income Taxes Payable		82 20
Old-Age Benefit Taxes Payable		12 28
Hospital Care Payable		11 25
Salaries and Commissions Payable		710 27

When this is done, only amounts actually paid to employees are recorded in the cash payments journal. The payroll checks are recorded in the General Debit column as a debit to Salaries and Commissions Payable.

**THE INVOICE RECORD** Frequently an *invoice record* or *invoice journal* is used in the place of a purchases journal. A record of invoices goes beyond the purchases journal in that it normally

summarizes all purchases on a credit basis, including merchandise, supplies, fixed assets, and services. The form that such a record may take, together with an accompanying cash payments record, follows:

## INVOICE RECORD

Page 35

DATE OF ENTRY	DATE OF INV.	INV. NO.	DESCRIPTION	POST REF.	GENERAL		EX- PENSES DR.	PUR- CHASES DR.	ACCTS. PAY. CR.	
					DR	CR				
953 Dec.	1953 1 Nov.	30 816	Masters Wholesale Co.	✓				480 00	480 00	
	1 30	817	Notes Payable	211		1,600 00		1,600 00		
	1 Dec.	1 818	Office Equip. — Loft, Inc.	122/✓	312 00					312 00
	31	29 891	Merton Auditors	61/✓			350 00			350 00
	31		Totals	✓	2,050 00	3,100 00	640 00	10,205 60	9,795 60	
					(✓)	(✓)	(✓)	(51)	(213)	

## CASH PAYMENTS JOURNAL

Page 63

DATE	CHECK NO.	ACCOUNT DEBITED	POST REF.	GENERAL		EX- PENSES DR.	ACCTS. PAY. DR.	PUR DIS CR.	CASH CR.	
				DR	CR					
953 Dec.	1 951	Elson Bros.	✓				310 00	6 20	303 80	
	1 952	Macy and Stone	✓				600 00		600 00	
	1 953-9	Payroll	61			829 80				
		Emp. Inc. Taxes Pay.	214		99 75					
		O.A.B. Taxes Pay.	215		12 45					717 60
	31 1047	Notes Payable	211	5,000 00						
		Interest Expense	61			150 00				5,150 00
	31	Totals	✓	9,620 10	615 60	4,410 00	7,460 60	120 15	20,754 95	
				(✓)	(✓)	(✓)	(213)	(71)	(111)	

Each invoice is entered in the invoice record, provision being made in the journal for indicating the charge resulting from the invoice as well as the nature of the payable arising from the transaction. A special column is provided for Accounts Payable, other payables being reported in the General Credit column. Items reported in the General Credit column are posted separately. Special columns are provided for Purchases and for Expenses, other charges being reported in the General Debit column. As previously illustrated, an expense account providing for expense analysis may be maintained in the general ledger, the expense detail being posted to the analysis section from the

invoices. Charges reported in the General Debit column are posted separately.

As previously indicated, forms for recording purchases or invoices and for cash payments should be designed to serve the particular business unit. The forms that have been illustrated are representative of the needs of a retail establishment of moderate size.

**THE VOUCHER SYSTEM** A relatively large organization ordinarily provides for the control of purchases and cash disbursements through adoption of some form of a *voucher system*. With the use of a voucher system, checks may be drawn only upon a written authorization in the form of a voucher approved by some responsible official. A voucher must be prepared, not only in support of payments for purchases of merchandise and services on account, but also for cash purchases, retirement of debt, replenishment of petty cash funds, payrolls, dividends, etc. Vouchers identify the person authorizing the expenditure, explain the nature of the transaction, and name the accounts that are affected by the transaction. Vouchers relating to purchases invoices are generally checked against goods received. Upon verification, the voucher, together with related business papers in support of the voucher, is submitted to the appropriate officer for final approval. Only when it is approved may it be used as the basis for a check.

Upon approval, vouchers are numbered and recorded in a *voucher register*. Vouchers, together with supporting papers, are then placed in an unpaid vouchers file.

The voucher register is a book of original entry classifying and summarizing the charges on each voucher and reporting the credit to Accounts Payable, or *Vouchers Payable* as the liability is sometimes called. Individual amounts owed need not be posted to an accounts payable ledger, as the unpaid vouchers file serves as a subsidiary record and offers the detail of the individual payables as summarized in the voucher register.

Checks are written in payment of individual vouchers and result in a charge to Accounts Payable, or Vouchers Payable, in a check register. Charges to the various asset, liability, or expense accounts, having been recognized when the payable was recorded in the voucher register, are no longer required in the cash payments record. When a check is issued, payment of the voucher is reported in the voucher register by entering the check number and the payment date. Paid vouchers and invoices are removed from the unpaid vouchers file, marked "Paid," and filed in a separate paid vouchers file. The bal-

ance of the payable account after the credit for total vouchers issued has been posted from the voucher register and the debit for total vouchers paid has been posted from the cash payments record should be equal to the sum of the unpaid vouchers as shown both in the voucher register and in the unpaid vouchers file.

A voucher register and a check register are illustrated below:

VOUCHER REGISTER

Page 81

DATE	VCHR NO	NAME	PAID		ACCT'S PAY CR	PUR CHASES DR	✓	EXPENSES DR	GENERAL			
			DATE	CHK NO					ACCOUNT	P R	DR	CR
1953												
Dec.	1	1216	R. A. Ross		417 40	417 40						
	1	1217	B. L. Belsey	12/1	1009	600 00	✓	600 00				
	1	1218	Parks & Co.		110 00				Office Equip.	122	110 00	
	1	1219	State Bank	12/1	1010	5075 00	✓	75 00	Notes Pay.	211	5000 00	
	31	1307	Payroll	12/31	1093	796 66	✓	914 00	Empl. Inc.			
									Taxes Pay.	214		103 60
									O.A.B.			
									Taxes Pay.	215		13 74
	31	1308	Petty Cash	12/31	1094	81 14	✓	81 14				
	31		Totals			23129 42		8012 02	Totals	✓	9315 05	586 70
					(213)	(51)		(✓)			(✓)	(✓)

CHECK REGISTER

Page 81

DATE	CHECK NO	PAYEE	VCHR NO	ACCOUNTS PAYABLE DR	PURCHASES DISCOUNT CR	CASH CR
1953						
Dec.	1	1008	L. A. Lee	1184	317 00	634
	1	1009	B. L. Belsey	1217	600 00	600 00
	1	1010	State Bank	1219	5,075 00	5,075 00
	31	1092	W. W. Williams	1268	415 05	415
	31	1093	Payroll	1307	796 66	
	31	1094	Petty Cash	1308	81 14	
	31		Totals		21,288 75	116 40
				(213)	(71)	(11)

The total of the Accounts Payable Credit column and the total of the Purchases Debit column in the voucher register are posted at the end of the month to the corresponding accounts in the general ledger. The individual amounts in the Expenses Debit column are posted to the account Expenses — Control; the distribution to the analysis columns of this account is made from the business papers. At the end of the

month the balance of this account is compared with the total of the Expenses Debit column in the voucher register. The amounts in the General Debit and Credit columns are posted individually to the appropriate accounts in the general ledger. Only column totals are posted from the check register.

The system as illustrated here should simply be considered representative of certain basic routines. Modifications of the system as illustrated should be made in accordance with the special requirements of the business for which it is designed.

### THE GENERAL JOURNAL

Entries that cannot be recorded in the special journals are recorded in a *general journal*. While the general journal may be set up in two-column form, it is frequently set up in three-column form, with a detail column provided for individual debits and credits to subsidiary records and separate debit and credit columns for entries affecting general ledger accounts. The general journal with a detail column is illustrated below:

GENERAL JOURNAL					PAGE 15	
DATE	DESCRIPTION	POST REF.	DETAIL	DEBITS	CREDITS	
.53 ec.	1 Notes Receivable	113		450 00		
	Accounts Receivable	116				450 00
	A. R. Ross		450 00			
<hr/>						
	31 Expenses (Control)	61		560 00		
	Depreciation of Store Equipment	614	560 00			
	Allowance for Depreciation of Store Equipment	0123				560 00

It would be possible to provide additional special debit and credit columns in the general journal. Special columns then summarize the effect of general journal entries for posting purposes.

### MACHINE RECORDING METHODS

When sales, purchases, cash receipts, and cash disbursements are numerous, the use of bookkeeping machines makes possible the saving of considerable labor and expense, reduces the many possibilities for errors, and results in neater records. Bookkeeping machines can be used not only for journalizing and posting but also for preparation of the various original papers. Special journals, subsidiary account forms, and other documents are *collated*, that is, designed and arranged, so that recording with the use of carbons will serve the various required functions.

## QUESTIONS

1. Indicate the accounting function supplied by (a) the business paper, (b) the book of original entry, and (c) the ledger.
2. Distinguish between: (a) real and nominal accounts, (b) general journal and special journal, (c) general ledger and subsidiary ledger, (d) invoice record and voucher register, (e) T form and balance form of account.
3. Classify the following transactions as (1) business transactions or (2) internal transactions:
  - (a) Trade-in of an old fixed asset for a new one.
  - (b) Depreciation of building.
  - (c) Receipt of 60¢ on the dollar on an account receivable.
  - (d) Cash dividend.
  - (e) Factory supplies used.
  - (f) Estimate of bad debts expense.
4. What advantages are provided through the use of (a) special journals, (b) subsidiary ledgers, and (c) the voucher system?
5. (a) What business papers are used in posting debits and credits to customer and creditor accounts? (b) Would it be better practice to post to these accounts from books of original entry? Explain.
6. Describe the use of an expenses control account with sub-account analysis.
7. (a) What is the purpose of the payroll record? (b) Explain the use of this form as a supplementary record. (c) Explain the use of this form as a special book of original entry. (d) Explain the use of this form as a subsidiary record for a general ledger account balance.
8. The Select Products Co. maintains special books of original entry for sales, invoices, cash receipts, and cash disbursements. State the journal in which each of the following transactions should be recorded:
  - (a) Purchased office supplies on account.
  - (b) Issued a note to a creditor.
  - (c) Wrote off a customer's uncollectible account against the allowance for bad debts account.
  - (d) Replenished the petty cash fund.
  - (e) Recorded a shortage caused by mistakes in making change.
  - (f) Traded in delivery equipment for new equipment.
  - (g) Sold capital stock for cash.
  - (h) Paid the payroll.
  - (i) Recorded depreciation for the month.
  - (j) Purchased merchandise for cash.
9. (a) Describe the nature and the operation of the voucher system. (b) How does the voucher register serve as a combined book of original entry and subsidiary ledger?
10. What are the advantages offered through use of bookkeeping machines? Suggest several possibilities for labor-saving methods.
11. Suggest books of original entry and the form that these might take in designing a bookkeeping system for (a) a theater, (b) a retail grocery store doing a cash business, (c) a gas station offering credit to certain customers, and (d) a retail department store selling furniture, clothing, and dry goods.

### EXERCISES

1. Assume the use of sales and cash receipts journal forms as illustrated on pages 60 and 61, together with a general journal. Explain how each of the following transactions would be recorded in these journals:

- (a) A sale on account, \$600, is made to A. P. Reeder.
- (b) Reeder makes payment of \$300 less 2% cash discount and gives a 60-day note for the \$300 balance.
- (c) Cash sales for the day are \$950, on which sales taxes of \$20 are collected.
- (d) Cash of \$990 is received on a 60-day note for \$1,000 issued to the bank.
- (e) Furniture and fixtures, cost \$800, book value \$250, are sold for \$100 cash.
- (f) A dividend check for \$60 is received on stock owned.

2. Assume the use of sales and cash receipts journal forms as illustrated on page 63, together with a general journal. Explain how each of the transactions in Exercise 1 above would be recorded therein.

3. Assume the use of purchases and cash payments journal forms as illustrated on page 65, together with a general journal. Explain how each of the following transactions would be recorded in these journals:

- (a) Merchandise is purchased from R. A. Faye, \$300, terms 2/10 e.o.m.
- (b) Payment is made to R. A. Faye less 2% discount.
- (c) Store supplies are purchased from T. C. Sharpe, \$112, terms n/30.
- (d) Payment is made to T. C. Sharpe.
- (e) Payment is made on a \$1,000, 60-day, 6% note, \$1,010.
- (f) An invoice is received for utilities for the month, \$90.
- (g) The invoice received in (f) is paid.
- (h) The payroll for the week is paid, \$334, representing salaries, \$400, less income taxes withheld, \$60, and less old-age benefit taxes withheld, \$6.
- (i) Store fixtures are purchased at a cost of \$1,200, a 25% down payment being made on the purchase.

4. Assume the use of invoice record and cash payments journal forms as illustrated on page 69, together with a general journal. Explain how each of the transactions in Exercise 3 above would be recorded therein.

5. Assume the use of a voucher register and a check register similar to those illustrated on page 71. Explain (1) how each voucher would be recorded in the voucher register and (2) how the payment of each voucher would be recorded in the check register, assuming that all discounts are taken.

- (a) Voucher No. 1311 for merchandise purchased from A. L. Phillips, \$560, terms 2/10, n/60.
- (b) Voucher No. 1312 for legal services, \$75.
- (c) Voucher No. 1313 for factory supplies purchased from Jones Manufacturing Co., \$60, terms n/60.
- (d) Voucher No. 1314 for sales salaries of \$600, less income taxes withheld, \$101, and less old-age benefit taxes withheld, \$9.
- (e) Voucher No. 1315 for a note, \$2,500, and interest, \$25, payable to State National Bank.
- (f) Voucher No. 1316 to set up a petty cash fund, \$100.

## PROBLEMS

3-1. The sales journal and the cash receipts journal of Paul T. Sanders for the month of October appear below:

## SALES JOURNAL

PAGE 10

DATE	NO. OF SALE	ACCOUNT DEBITED	RECEIPTS	AMOUNT
19 -- Oct.	2	416 A. T. Parker		410 90
	6	417 L. Wells		215 80
	17	418 M. T. Fuller		110 50
	20	419 G. A. Reese		605 00
	29	420 A. R. Wallace		110 00

## CASH RECEIPTS JOURNAL

PAGE 12

DATE	ACCOUNT CREDITED	POST REF.	GENERAL CR	SALES CR	ACCOUNTS RECEIVABLE CR	SALES DISCOUNT DR	CASH DR
19 -- Oct.	1 Notes Payable		3,500 00				3,500 00
	6 Sales			1,217 40			1,217 40
	8 R. T. Beals				415 10	8 30	406 80
	9 Notes Receivable		1,000 00				
	Interest Income		30 00				1,030 00
	12 A. T. Parker				410 90	8 22	402 68
	13 Sales			1,090 45			1,090 45
	20 L. Wells				100 00		100 00
	20 Sales			1,540 15			1,540 15
	26 M. T. Fuller				110 50	2 21	108 29
	27 Sales			1,614 20			1,614 20
	29 G. A. Reese				405 00	8 10	396 90
	31 Sales			456 60			456 60

The general journal for October includes the following entries:

## GENERAL JOURNAL

PAGE 18

DATE	DESCRIPTION	POST REF.	DETAIL	DEBITS	CREDITS
9 -- Oct.	6 Notes Receivable			1,500 00	
	Accounts Receivable				1,500 00
	C. C. Collins		1,500 00		
	12 Allowance for Bad Debts			310 00	
	Accounts Receivable				310 00
	P. T. Stewart		310 00		
	15 Notes Receivable			415 00	
	Accounts Receivable				415 00
	T. A. Tucker		415 00		
	25 Sales Returns and Allowances			200 00	
	Accounts Receivable				200 00
	G. A. Reese		200 00		

Accounts receivable on September 30 were as follows:

R. T. Beals.....	\$ 415.10	P. T. Stewart.....	\$310.00
C. C. Collins.....	1,500.00	T. A. Tucker.....	415.00

*Instructions:* (1) Set up a subsidiary accounts receivable ledger in T account form and record the information that would appear therein as a result of the information given above.

(2) Set up the accounts receivable controlling account in the general ledger in balance form and record the information that would appear in this account as of October 31.

(3) Prepare a summary to prove the accuracy of the detail reported in the subsidiary ledger.

**3-2.** C. M. Walters began business on July 1. The books of original entry used to record his transactions for July were the same as those illustrated in the text on the following pages:

Sales Journal—page 63	Voucher Register—page 71
Cash Receipts Journal—page 63	Check Register—page 71

All cash receipts are entered in the cash receipts journal and are deposited in the bank. All payments are made by check upon voucher authorization, and checks are recorded in the check register. All sales—including cash, installment, and regular charge sales—are recorded in the sales journal. A 3% sales tax is added to all sales prices. A 2% discount is allowed on regular charge sales (before sales tax) when collection is received within 10 days of sale.

The chart of general ledger accounts required is as follows:

Acct. No.	ACCOUNT TITLE	Acct. No.	ACCOUNT TITLE
111	Cash	216	Old-Age Benefit Taxes Payable
115	Installment Contracts Receivable	31	C. M. Walters, Capital
116	Accounts Receivable	41	Sales
118	Store Supplies	42	Installment Sales
119	Prepaid Insurance	51	Purchases
122	Store Equipment	61	Expenses
213	Accounts Payable	71	Purchases Discount
214	Sales Taxes Payable	81	Sales Discount
215	Employees Income Taxes Payable		

The following transactions were completed during July:

- July
1. Invested cash in the business, \$10,000.
  1. Issued Voucher No. 1 to Lambert Realty Co. for July rent, \$325; then issued Check No. 1 in payment of the voucher.
  1. Purchased store equipment on account from Standard Equipment Co., \$5,600, terms n/30.
  1. Purchased store supplies from Acme Supply Co. for cash, \$325.
  2. Purchased merchandise from Superior Mfg. Co. for cash, \$1,200.
  3. Sold merchandise on regular account to Polk & Vance, \$516.50, plus sales tax, \$15.50.

- July 3. Purchased merchandise on account from R. J. Brooks, \$4,400, terms 2/10, n/30.
3. Paid premium for insurance on merchandise and fixtures for one year to Lawton Insurance Agency, \$210.
5. Purchased merchandise on account from P. A. Gale Co., \$2,100, terms 2/10, n/60.
6. Sold merchandise on regular account to Vernon Co., \$475, plus sales tax, \$14.25.
6. Paid the *Daily News* for newspaper advertising, \$57.50.
8. Sold merchandise on regular account to Morse & Co., \$615, plus sales tax, \$18.45.
10. Sold merchandise on the installment contract plan to C. D. Hyde, \$185, plus sales tax, \$5.55. Received a down payment of \$50.
12. Received payment from Polk & Vance for sale of July 3, \$521.67.
13. Paid R. J. Brooks invoice of July 3, less 2% discount.
15. Paid the payroll for July 1-15, \$550, less income taxes withheld, \$82.40, and less old-age benefit taxes withheld, \$8.25.
15. Paid the P. A. Gale Co. invoice of July 5, less 2% discount.
15. Cash sales for July 1-15 were \$3,105, plus sales tax, \$93.15.
16. Received payment from Vernon Co. for sale of July 6, \$479.75.
17. Sold merchandise on the installment contract plan to Henry Abbott, \$395, plus sales tax, \$11.85. Received a down payment of \$100.
18. Received payment from Morse & Co. for sale of July 8, \$621.15.
19. Paid Freeman Bros. for miscellaneous repairs, \$47.25.
20. Sold merchandise on regular account to Woodall and Co., \$360, plus sales tax, \$10.80.
20. Purchased merchandise on account from Stoner Corporation, \$1,650, terms 2/10, n/30.
22. Sold merchandise on regular account to B. A. Bailey, \$750, plus sales tax, \$22.50.
24. Received the weekly installment payment from Henry Abbott, \$10.
26. Purchased merchandise on account from Superior Manufacturing Co., \$865, terms 2/10, n/30.
29. Paid Stoner Corporation invoice of July 20, less 2% discount.
30. Sold merchandise on the installment contract plan to J. S. Snider, \$275, plus sales tax, \$8.25. Received a down payment of \$75.
31. Received the weekly installment payment from Henry Abbott, \$10.
31. Paid Standard Equipment Co. invoice of July 1.
31. Paid the payroll for July 16-31, \$550, less income taxes withheld, \$82.40, and less old-age benefit taxes withheld, \$8.25.
31. Cash sales for July 16-31 were \$3,660, plus sales tax, \$109.80.

*Instructions:* (1) Record the transactions for July in the four books of original entry indicated above. Number vouchers, checks, and sales beginning with No. 1 for each classification.

(2) Rule the books of original entry and post to accounts in (a) the general ledger, (b) the subsidiary accounts receivable ledger, and (3) the subsidiary installment contracts receivable ledger. Set up the general ledger accounts in balance form. In this problem you will post the total of the Expenses Dr. column of the voucher register to the expenses control account, but you need not maintain the sub-accounts showing the distribution of expenses. Set up the subsidiary ledger accounts in T form.

(3) Prepare a trial balance of the general ledger and prepare summaries to prove the subsidiary ledgers.

**3-3.** Charles P. Blake began business operations on November 1. The following books of original entry were designed to record his transactions:

## SALES JOURNAL

CASH DR	ACCOUNTS RECEIVABLE DR	DATE	SALE NO	ACCOUNT DEBITED	POST RIT	SALES TAXES PAYABLE CR	SALES CR

## CASH RECEIPTS JOURNAL

GENERAL DR	SALES DISCOUNT DR	CASH DR	DATE	DESCRIPTION	POST RIT	GENERAL CR	SALES CR	ACCOUNTS RECEIVABLE CR

## INVOICE RECORD

GENERAL DR	EXPENSES DR	PURCHASES DR	DATE OF ENTRY	DATE OF INVOICE	DESCRIPTION	POST RIT	GENERAL CR	ACCOUNTS PAYABLE CR

## RECORD OF CHECKS DRAWN

GENERAL DR	EXPENSES DR	ACCOUNTS PAYABLE DR	DATE	CHECK NO	DESCRIPTION	POST RIT	GENERAL CR	PURCHASES DISCOUNT CR	CASH CR

## GENERAL JOURNAL

ACCOUNTS PAYABLE DR	GENERAL DR	DATE	DESCRIPTION	POST RIT	GENERAL CR	ACCOUNTS RECEIVABLE CR

All sales, both cash and credit, are to be recorded in the sales journal. All cash receipts are to be entered in the cash receipts journal, and all receipts are to be deposited in the bank. All payments are to be made by check and are to be recorded in the check record. A 3% state sales tax is added to all sales prices. A 2% discount is allowed on charge sales (before sales tax) when collection is received within 10 days of sale.

The chart of general ledger accounts required for the November transactions is as follows:

ACCT NO	ACCOUNT TITLE	ACCT NO	ACCOUNT TITLE
111	Cash	216	Old-Age Benefit Taxes Payable
113	Notes Receivable	31	Charles P. Blake, Capital
115	Accounts Receivable	32	Charles P. Blake, Drawing
117	Supplies	41	Sales
118	Prepaid Insurance	51	Purchases
121	Store Equipment	051	Purchases Returns and Allowances
211	Notes Payable	61	Expenses
213	Accounts Payable	71	Purchases Discount
214	Sales Taxes Payable	81	Sales Discount
215	Employees Income Taxes Payable	82	Loss on Sale of Fixed Assets

The following transactions were completed by Mr. Blake during November:

- Nov. 1. Invested cash in the business, \$12,000.
1. Paid cash for rent for November, \$600.
  1. Purchased store equipment on account from Porter Equipment Co., \$4,500, invoice dated November 1, terms n/10.
  1. Purchased store supplies for cash, \$120.
  2. Purchased merchandise on account from Stabler Co., \$3,200, invoice dated November 1, terms 1/10, n/30.
  2. Purchased merchandise for cash, \$1,200.
  2. Paid for insurance on merchandise and fixtures for one year, \$180.
  4. Purchased merchandise on account from Phillips Products, \$1,750, invoice dated November 2, terms 2/10, n/60.
  8. Sold merchandise on account to Paul, Inc., \$510, plus sales tax, \$15.30.
  9. Purchased merchandise from Belsey, Inc., \$2,750, invoice dated November 8, terms 60-day, 6% note. Sent note to Belsey, Inc.
  10. Paid Porter Equipment Co. invoice of November 1.
  12. Paid Phillips Products invoice of November 2, less 2% discount.
  15. Cash sales for November 1-15 were \$2,095, plus sales tax collections, \$62.85.
  15. Paid the payroll for November 1-15, \$450, less income taxes withheld, \$60.50, and less old-age benefit taxes withheld, \$6.75.
  15. Withdrew cash for personal use, \$250.
  17. Sold merchandise on account to R & S Co., \$800, plus sales tax, \$24. Received a 2-month, 6% note in settlement.
  18. Received a credit memorandum from Stabler Co. for merchandise returned, \$120.
  18. Received payment from Paul, Inc. for sale of November 8, \$515.10.
  21. Purchased merchandise on account from Phillips Products, \$1,600, invoice dated November 21, terms 2/10, n/30.
  23. Sold merchandise on account to R & S Co., \$150, plus sales tax, \$4.50.
  25. Received a credit memorandum from Phillips Products for merchandise returned, \$36.50.
  26. Purchased store equipment for cash, \$600, and paid an additional \$50 to install the equipment. Sold equipment purchased on November 1 that was inadequate, cost \$350, for \$250.
  29. Issued a 30-day, non-interest-bearing note to Stabler Co. for the balance due, \$3,080.
  30. Received an invoice from Lang Bros. for miscellaneous repairs, \$65, invoice dated November 30, terms n/10.
  30. Paid the payroll for November 16-30, \$515, less income taxes withheld, \$72.60, and less old-age benefit taxes withheld, \$7.73.
  30. Cash sales for November 16-30 were \$2,518, plus sales tax collections, \$75.54.

*Instructions:* (1) Record the transactions for November in the five books of original entry shown above. Number checks and sales beginning with No. 1 for each classification.

(2) Rule the books of original entry and post to accounts in (a) the general ledger, (b) the subsidiary accounts receivable ledger, and (c) the subsidiary accounts payable ledger. Set up the general ledger accounts in balance form. In this problem you will post the totals of the Expenses Dr. columns in the

invoice record and in the record of checks drawn to the expenses control account, but you need not maintain the sub-accounts showing the distribution of expenses. Set up the subsidiary ledger accounts in T form.

(3) Prepare a trial balance of the general ledger and prepare summaries to prove the subsidiary ledgers.

3-4. The account balances in the general ledger of the Norris Corporation as of November 30 are shown in the trial balance below. Books of original entry as summarized for the month of December follow the trial balance.

### NORRIS CORPORATION

#### TRIAL BALANCE

NOVEMBER 30, 19--

First National Bank.....	\$12,700	
Notes Receivable.....	16,000	
Accounts Receivable.....	58,000	
Allowance for Bad Debts.....		\$ 1,100
Merchandise Inventory.....	64,000	
Office Supplies.....	2,000	
Prepaid Insurance.....	1,600	
Investment in Bessin Co. Common Stock.....	27,500	
Furniture and Fixtures.....	12,000	
Allowance for Depreciation of Furniture and Fixtures..		4,200
Buildings.....	65,000	
Allowance for Depreciation of Buildings.....		16,000
Land.....	45,000	
Notes Payable.....		19,000
Accounts Payable.....		33,000
O.A.B. Taxes Payable.....		250
State Unemployment Taxes Payable.....		400
Bonds Payable.....		50,000
Common Stock.....		100,000
Premium on Common Stock.....		14,000
Earned Surplus.....		35,200
Sales.....		340,000
Sales Returns and Allowances.....	4,200	
Purchases.....	220,000	
Freight In.....	4,000	
Purchases Returns and Allowances.....		1,600
Sales Salaries and Commissions.....	21,500	
Advertising.....	12,000	
Miscellaneous Selling Expenses.....	2,400	
Delivery Expense.....	4,600	
Officers Salaries.....	15,000	
Office Salaries.....	13,400	
Taxes.....	3,500	
Miscellaneous General Expense.....	3,800	
Purchases Discounts.....		1,600
Interest Income.....		850
Sales Discounts.....	2,800	
Interest Expense.....	6,200	
	<u>\$617,200</u>	<u>\$617,200</u>

The sales journal summarized both cash sales and sales on account and was as follows:

SALES JOURNAL

FIRST NATIONAL BANK DR	ACCOUNTS RECEIVABLE DR	POST REF	DATE	ACCOUNT DEBITED	SALES CR	SALES TAXES PAYABLE CR
12,500	27,300				38,600	1,200
(✓)						

The cash receipts journal reported all cash received and was as follows:

CASH RECEIPTS JOURNAL

SALES DISCOUNTS DR	FIRST NATIONAL BANK DR	DATE	ACCOUNT CREDITED	POST REF	SUNDRY CR	SALES CR	ACCOUNTS RECEIVABLE CR
250	71,525				28,075	12,500	31,200
						(✓)	

Sundry Credits recorded in the cash receipts journals were:

Notes Receivable	\$ 2,500
Interest Income	75
Notes Payable	10,000
Investment in Bessin Co. Common Stock	12,500
Gain on Sale of Securities	3,000

The invoice record summarized all invoices received and was as follows:

INVOICE RECORD

SUNDRY CR	POST REF	ACCOUNTS PAYABLE CR	INV NO	DATE OF INVOICE	DESCRIPTION	DATE OF PAY	PURCHASER DR	INVOICER DR	SUNDRY DR
5,000		25,050					24,500	2,200	3,350

Sundry Debits and Credits recorded in the invoice record were:

DEBITS		CREDITS	
Furniture and Fixtures	\$2,600	Notes Payable	\$5,000
Prepaid Insurance	300		
Office Supplies	450		

An analysis of expense invoices resulted in the following distribution:

Freight In	\$400
Advertising	650
Miscellaneous Selling Expense	200
Delivery Expense	550
Miscellaneous General Expense	400

The record of checks drawn summarized all checks written and was as follows:

RECORD OF CHECKS DRAWN

P. R.	PURCHASES DISCOUNTS CR.	EMPLOYEES INC. TAXES PAYABLE CR.	O A B TAXES PAYABLE CR.	FIRST NAT'L BANK CR.	CK. NO.	DATE	PAYEE	ACCOUNTS PAYABLE DR	EXPENSES DR	SUNDY DR.	P. R.
	150	1,050	75	50,375				31,150	8,700	11,800	

Sundry Debits reported in the record of checks drawn were:

Notes Payable.....	\$5,000
Prepaid Insurance.....	50
Furniture and Fixtures.....	250
Investment in Carlson Co. Common.....	6,500

An analysis of expense payments resulted in the following distribution:

Sales Returns and Allowances.....	\$ 300
Freight In.....	50
Sales Salaries and Commissions.....	3,200
Miscellaneous Selling Expenses.....	100
Officers Salaries.....	3,000
Office Salaries.....	1,800
Miscellaneous General Expense.....	50
Interest Expense.....	200

The following entries appeared in the general journal in December:

Notes Receivable.....	3,500	
Accounts Receivable.....		3,500
Allowance for Bad Debts.....	250	
Accounts Receivable.....		250
Accounts Payable.....	200	
Purchases Returns and Allowances..		200
Taxes .....	200	
O.A.B. Taxes Payable .....		75
State Unemployment Taxes Payable		125

*Instructions:* (1) Set up T accounts and record the balances reported as of November 30.

(2) Record directly in the accounts the transactions for the month of December as reported in the books of original entry.

(3) Prepare a trial balance as of December 31.

**3-5.** The account balances in the general ledger of the Warren Manufacturing Company as of November 30 are shown in the trial balance below. Books of original entry as summarized for the month of December follow the trial balance.



Insurance.....	6,000	
Miscellaneous General Expense.....	2,600	
Purchases Discount.....		2,700
Interest Income.....		1,200
Dividend Income.....		400
Sales Discount.....	4,000	
Interest Expense.....	8,000	
	<u>\$805,400</u>	<u>\$805,400</u>

The sales journal summarized both cash sales and sales on account and was as follows:

SALES JOURNAL

SECURITY BANK DR.	ACCOUNTS RECEIVABLE DR.	POST. REF.	DATE	ACCOUNT DEBITED	SALES CR.	SALES TAXES PAYABLE CR.
8,600	35,500				43,600	500
(✓)						

The cash receipts journal reported all cash received and was as follows:

CASH RECEIPTS JOURNAL

GENERAL DR.	SALES DISCOUNT DR.	SECURITY BANK DR.	DATE	ACCOUNT CREDITED	POST. REF.	GENERAL CR.	SALES CR.	ACCOUNTS RECEIVABLE CR.
2,400	700	68,700				32,400	8,600	30,800
							(✓)	

General Debits and Credits recorded in the cash receipts journal were:

DEBITS		CREDITS	
Loss on Sale of Bailey Co.		Notes Receivable.....	\$ 8,000
Common Stock.....	\$2,400	Interest Income.....	400
		Investment in Bailey Co.	
		Common Stock.....	24,000

Checks are written only upon authorization in the form of a voucher.  
The voucher register follows:

VOUCHER REGISTER

DATE	VCHR. NO.	NAME	PAID		ACCOUNTS PAYABLE CR.	RAW MATERIALS PURCHASES DR.	EXPENSES DR.	GENERAL			
			DATE	CR. NO.				ACCOUNT	P. R.	DR.	CR.
					54,875	12,000	28,600			16,100	1,825

An analysis of expense vouchers showed the following distribution:

Direct Labor .....	\$8,000	Factory Supplies .....	700
Indirect Labor .....	2,600	Taxes .....	2,100
Factory Superintendence .....	2,400	Misc. Factory Expense .....	400
Sales Salaries .....	2,700	Advertising .....	500
Delivery Salaries .....	1,000	Misc. Selling Expense .....	200
Officers Salaries .....	1,600	Misc. Delivery Expense .....	300
Office Salaries .....	1,500	Office Supplies .....	400
Freight In .....	400	Misc. General Expense .....	200
Building Maintenance .....	600	Interest Expense .....	600
Factory Heat, Light, Power .....	2,400		

General Debits and Credits reported in the voucher register were as follows:

DEBITS		CREDITS	
Tools .....	\$ 800	Employees Income Taxes Payable .....	\$1,600
Office Furniture and Fixtures .....	500	Old-Age Benefit Taxes Payable .....	225
Machinery and Equipment .....	2,400		
Notes Payable .....	12,000		
Sales Returns and Allowances .....	400		

The check register summarized all checks drawn and appeared as follows:

CHECK REGISTER

DATE	CHECK NO.	VCHL. NO.	PAYEE	ACCOUNTS PAYABLE DR.	PURCHASES DISCOUNTS CR.	SECURITY BANK CR.
				41,775	300	41,475

General journal entries in December were:

Notes Receivable .....	2,500	
Accounts Receivable .....		2,500
Allowance for Bad Debts .....	400	
Accounts Receivable .....		400
Accounts Payable .....	1,000	
Raw Materials Purchases Returns .....		1,000
Taxes .....	625	
Old-Age Benefit Taxes Payable .....		225
State Unemployment Taxes Payable .....		400

*Instructions:* (1) Set up T accounts and record the balances reported as of November 30.

(2) Record directly in the accounts the transactions for the month of December as reported in the books of original entry.

(3) Prepare a trial balance as of December 31.

# The Periodic Summary

### STEPS IN THE PERIODIC SUMMARY

The accounting routine at the close of the fiscal period is frequently referred to as the *periodic summary* and normally consists of the following steps:

(1) *A trial balance of the accounts in the ledger is taken.* The trial balance offers a summary of the information as classified and summarized in the ledger, as well as a check on the accuracy of the recording process.

(2) *The data required to bring the accounts up to date are compiled.* Before accounting statements can be prepared, all of the accountable information that has not been recorded must be determined.

(3) *A work sheet is prepared.* By means of the work sheet, information in steps (1) and (2) is summarized and classified.

(4) *Accounting statements are prepared from the work sheet.* Statements that summarize operations and that show the financial condition are prepared from the information supplied on the work sheet.

(5) *Accounts are adjusted and closed.* Accounts in the ledger are brought up to date. Balances in nominal accounts are then closed, and the profit and loss detail is summarized in appropriate summary accounts. The result from operations as calculated in summary accounts is finally transferred to the appropriate proprietorship account.

(6) *A post-closing trial balance is taken.* A trial balance is taken to check the equality of the debits and credits after the posting of the adjusting and closing entries.

(7) *Accounts are reversed.* Accrued and deferred balances that were established by adjusting entries are returned to the nominal accounts that are to be used in accounting for activities involving these items in the new period.

### ADJUSTING THE ACCOUNTS

The division of the life of a business into periods of arbitrary length creates many important problems for the accountant who must measure the financial progress for a certain period and report on the financial position at the end of this period. Transactions of the period have been recorded in balance sheet and profit and loss accounts. At the end of the period, mixed accounts require adjustment. At this time, too, other financial data not recognized currently must be entered in the accounts in bringing the books up to date. Attention is directed in this chapter to the special problems that arise in bringing the accounts up to date and in summarizing their effects. The adjustment of accounts is considered under the following headings:

Asset Depreciation and Cost Amortization  
 Probable Uncollectible Items  
 Accrued Expenses  
 Accrued Incomes

Deferred Expenses  
 Deferred Incomes  
 Inventories

It should be observed that while the discussion of adjustments is based upon their treatment in the books of account during the adjusting and closing phase of the accounting process, each adjustment would first appear on the work sheet.

**ASSET DEPRECIATION  
 AND COST  
 AMORTIZATION**

The charge to operations for the use of plant and equipment items during a period must be calculated and recorded at the end of the period. In recognizing depreciation on an asset, operations are charged with a portion of the cost of the asset, the carrying value of the asset being reduced by this amount. The asset account may be credited directly for the cost assigned to the current operating period. However, when it is desired that both original cost and the amount of the cost already charged to operations be shown, a valuation account is credited. In determining the charge to be made to current operations, the cost of the asset less any estimated residual value is divided by the estimated useful life of the asset. To illustrate this procedure, assume the use of the following asset:

Store equipment; cost, \$50,000; estimated useful life, 10 years; estimated scrap value at the end of that time, \$2,500.

The entry to record the depreciation of store equipment for a year follows:

Depreciation of Store Equipment	...	4,750	
Allowance for Depreciation of Store Equipment	.....		4,750

**PROBABLE  
 UNCOLLECTIBLE  
 ITEMS**

Provision is ordinarily made for the probable loss that will arise upon the collection of receivables created by sales of the current period. In recognizing the probable loss arising from the policy of granting credit to customers, operations are charged with the estimated loss, and receivables are reduced to their estimated collectible balance by means of a valuation account. When receivables actually prove uncollectible, they are charged against the valuation account balance. To illustrate the nature of the adjustment to be made for probable uncollectibles, assume that losses of \$5,000 are expected on accounts arising from sales of the current period. The adjustment at the end of the period is:

Loss from Bad Debts	.....	5,000	
Allowance for Bad Debts	.....		5,000

**ACCRUED EXPENSES**

During the period, certain expenses may have been incurred although payment is not to be made until a subsequent period. At the end of the current period, it is necessary to determine and record the expenses that have not yet been recognized. In recording an accrued expense, an expense account is debited and an accrued liability account is credited.

At the start of the new period, the balance in the accrued liability account may be transferred to the credit side of the appropriate expense account by means of a reversing entry. The reversing entry makes it possible for the bookkeeper to record the expense payments in the new period in the usual manner. The expense account is debited for the full expense payments, the entry on the credit side of the account absorbing that part of the payments which was recognized as expense in the prior period. If reversing entries are not made for accrued expenses, expense payments will have to be analyzed as to (1) the amount representing payment of an accrued liability balance, and (2) the amount chargeable to expense of the current period. Reversing entries are normally made for accrued expenses in order to avoid the need for such analysis.

*Accounting for Accrued Expense Illustrated.* To illustrate accounting for an accrued expense (1) when reversing entries are made and (2) when reversing entries are not made, assume that on December 31 accrued salaries are \$350. Payment of salaries for the week ending January 4 is \$1,000. Adjustments are made and the books are closed annually on December 31. Entries would be made as follows:

	(1) Assuming Accrued Expense Balance Is Reversed	(2) Assuming Accrued Expense Balance Is Not Reversed
December 31 Adjusting entry to record accrued salaries.	Salaries 350 Salaries Payable 350	Salaries 350 Salaries Payable 350
December 31 Closing entry to transfer expense to the profit and loss account	Profit and Loss xxx Salaries xxx	Profit and Loss xxx Salaries xxx
January 1 Reversing entry to trans- fer balance to the ac- count that will be charged when payment is made.	Salaries Payable 350 Salaries 350	No entry
January 4 Payment of salaries for week ending January 4.	Salaries 1,000 Cash 1,000	Salaries Payable 350 Salaries 650 Cash 1,000

**ACCRUED INCOMES**

During the period, certain amounts may have been earned although collection is not to be made until a subsequent period. At the end of the period, then, it is necessary to determine and record the earnings that have not yet been recognized. In recording accrued income, an accrued asset account is debited and an income account is credited.

At the start of the new period, the balance in the accrued asset account may be transferred to the debit side of the appropriate income account by means of a reversing entry. The reversing entry makes it possible for the bookkeeper to record the receipt of income in the new period in the usual manner. The income account is credited for the full receipts, the entry on the debit side of the account absorbing that part of the receipts which was recognized as income of the prior period. If reversing entries are not made for accrued incomes, income receipts will have to be analyzed as to (1) the amount representing collection of an accrued asset balance and (2) the amount representing earnings of the current period.

*Accounting for Accrued Income Illustrated.* To illustrate accounting for accrued income (1) when reversing entries are made and (2) when reversing entries are not made, assume that on December 31, the end of a fiscal year, interest for 2 months is accrued on \$10,000 of 6% bonds owned. Interest on bonds is received semiannually. Adjustments are made and the books are closed annually on December 31. Entries would be made as follows:

	(1) Assuming Accrued Income Balance Is Reversed	(2) Assuming Accrued Income Balance Is Not Reversed
December 31 Adjusting entry to record accrued interest.	Accrued Interest on Investment in Bonds 100 Interest Income 100	Accrued Interest on Investment in Bonds 100 Interest Income 100
December 31 Closing entry to transfer income to the profit and loss account.	Interest Income xxx Profit and Loss xxx	Interest Income xxx Profit and Loss xxx
January 1 Reversing entry to trans- fer balance to the ac- count that will be cred- ited when collection is made.	Interest Income 100 Accrued Interest on Investment in Bonds 100	No entry
April 30 Collection of interest for six-month period.	Cash 300 Interest Income 300	Cash 300 Accrued Interest on Investment in Bonds 100 Interest Income 200

**DEFERRED EXPENSES**

Charges may have been incurred for services or commodities that are not to be received or used up in the current period. At the end of the period it is necessary to determine and record the portions of such charges that are applicable to subsequent periods. Such charges are to be deferred and reported as assets.

The method of adjusting for such deferred expenses depends upon how the expenditure was originally entered in the accounts. The charge for the commodity or service may have been recorded as a debit to (1) an expense account or (2) an asset account.

*Original Debit to an Expense Account.* If an expense account was originally debited, an appropriate asset account is debited for the expense applicable to a future period and the expense account is credited. The expense account then remains with a debit balance representing the amount applicable to the current accounting period.

The deferred balance in the asset account is ordinarily returned to the expense account at the start of the next period by a reversing entry. This is desirable, since further expenditures of the same character will continue to be recorded in the expense account, and the expense account at the end of the next fiscal period should show all of the relevant data for purposes of determining and recording the required adjustment at that time.

*Original Debit to an Asset Account.* If an asset account was originally debited, an appropriate expense account is debited for the expense portion applicable to the current period and the asset account is credited. The asset account remains with a debit balance that shows the amount applicable to future periods. In this instance, no transfer of the asset balance to an expense account at the start of the new period is made, since subsequent expenditures for the same purpose will continue to be recorded in the asset account.

*Accounting for Deferred Expense Illustrated.* To illustrate the two methods of accounting, assume that a 3-year insurance policy, dated July 1, is purchased for \$900. Adjustments are made and the books are closed annually on December 31. The required entries are given at the top of the following page.

**DEFERRED INCOMES**

During the period, income may have been recognized in advance of fulfillment of obligations in the form of services or commodities. At the end of the period it is necessary to determine and record the amounts of such incomes that are unearned and applicable to future periods. Such credits are to be deferred and reported as liabilities.

	(1) Assuming that the Charge Is Made to an Expense Account	(2) Assuming that the Charge Is Made to an Asset Account
July 1 Payment of premium.	<div>Insurance 900</div> <div>Cash 900</div>	<div>Unexpired Insurance 900</div> <div>Cash 900</div>
December 31 Adjusting entry to record: (1) deferred portion. (2) expired portion.	<div>Unexpired Insurance 750</div> <div>Insurance 750</div>	<div>Insurance 150</div> <div>Unexpired Insurance 150</div>
December 31 Closing entry to transfer expense to the profit and loss account.	<div>Profit and Loss 150</div> <div>Insurance 150</div>	<div>Profit and Loss 150</div> <div>Insurance 150</div>
January 1 Reversing entry to transfer balance to the account that will be charged with subsequent expenditures.	<div>Insurance 750</div> <div>Unexpired Insurance 750</div>	No entry

The method of adjusting for such deferred income items depends upon how the income was originally entered in the accounts. The income may have been recorded as a credit to (1) an income account or (2) a liability account.

*Original Credit to an Income Account.* If an income account was originally credited, this account is debited and an appropriate liability account is credited for the income applicable to a future period. The income account remains with a credit balance representing the earnings applicable to the current accounting period.

The deferred income in the liability account is ordinarily returned to the income account at the start of the next period by means of a reversing entry. This is desirable, since further income of the same character will continue to be recorded in the income account, and the income account at the end of the next fiscal period should show all of the relevant data for purposes of determining and recording the required adjustment at that time.

*Original Credit to a Liability Account.* If a liability account was originally credited, this account is debited and an appropriate income account is credited for the portion of the income that is applicable to the current period. The liability account remains with a credit balance that shows the amount applicable to future periods. In this instance, no transfer of the liability balance to an income account is made, since subsequent income of the same character will continue to be recorded in the liability account.

*Accounting for Deferred Income Illustrated.* To illustrate the two methods of accounting, assume that on October 1, \$600 is collected representing rental income for a period of one year from this date. Adjustments are made and the books are closed annually on December 31. The required entries are as follows:

	(1) Assuming that the Credit Is Made to an Income Account	(2) Assuming that the Credit Is Made to a Liability Account
October 1 Collection of rent.	Cash 600 Rental Income 600	Cash ... 600 Unearned Rental Income 600
December 31 Adjusting entry to record: (1) deferred portion. (2) earned portion.	Rental Income 450 Unearned Rental Income 450	Unearned Rental Income 150 Rental Income 150
December 31 Closing entry to transfer income to the profit and loss account.	Rental Income 150 Profit and Loss 150	Rental Income 150 Profit and Loss 150
January 1 Reversing entry to transfer balance to the account that will be credited with subsequent income.	Unearned Rental Income 450 Rental Income 450	No entry

## INVENTORIES

When perpetual or book inventory records are not maintained, physical inventories must be taken at the end of the period to determine the inventory amount to be reported on the balance sheet and the cost of goods sold amount to be reported on the statement of profit and loss. When perpetual or book inventories are maintained, the ending inventory balance and the cost of goods sold balance appear in the ledger and no adjustment is required. The two practices are described for trading and manufacturing concerns in the following paragraphs.

*Physical Inventories — The Trading Enterprise.* In a trading concern, the beginning inventory and the balance in the purchases account may be closed into the profit and loss account. The ending inventory is then recorded by a debit to the inventory account and a credit to the profit and loss account. The asset account now reflects the inventory balance at the end of the period; the profit and loss account shows the cost of goods sold. To illustrate, assume the following facts: merchandise on hand, January 1, 1953, \$40,000; purchases, 1953, \$310,000; merchandise on hand, December 31, 1953, \$50,000. The entries to close the beginning balance and to record the ending inventory follow:

To close the beginning inventory balance:	Profit and Loss.....	40,000	
	Merchandise Inventory.....		40,000
To record the ending inventory balance:	Merchandise Inventory.....	50,000	
	Profit and Loss.....		50,000

After Purchases has been closed into Profit and Loss, the inventory and profit and loss accounts appear as follows:

MERCHANDISE INVENTORY			
Beginning Inventory	40,000	To Profit and Loss	40,000
	<u>      </u>		<u>      </u>
Ending Inventory	50,000		

PROFIT AND LOSS			
Beginning Inventory	40,000	Ending Inventory	50,000
Purchases	310,000		

(Balance, \$300,000, Cost of Goods Sold)

After the accounts have been adjusted and the ending inventory has been recorded, remaining income and expense items may be transferred to the profit and loss account. Assuming that sales, other income, and extraordinary gains for the enterprise considered above total \$515,000 and expenses and extraordinary losses are \$165,000, the profit and loss account will show a credit balance of \$50,000 after these balances are closed.

If these facts relate to a corporation, the income taxes for the period are estimated and recorded by a debit to the profit and loss account and a credit to a current liability account. The balance in the summary account may now be transferred to Earned Surplus. Assuming that the taxes are estimated at \$15,000, the profit and loss, tax liability, and surplus accounts will appear as follows upon completion of the adjusting and closing process:

PROFIT AND LOSS			
Beginning Inventory	40,000	Ending Inventory	50,000
Purchases	310,000	Income and Gains	515,000
Expenses and Losses	165,000		
Income Taxes	15,000		
Increase in Earned Surplus	35,000		
	<u>565,000</u>		<u>565,000</u>

ESTIMATED INCOME TAXES PAYABLE	
Estimated Income Taxes	15,000

EARNED SURPLUS	
Increase from Profit and Loss	35,000

*Physical Inventories — The Manufacturing Enterprise.* In a manufacturing organization, three inventories are recognized: raw materials, goods in process, and finished goods. If the cost of goods manufactured is to be summarized separately, beginning and ending raw materials and goods in process inventories are recorded in a manufacturing account, and beginning and ending finished goods inventories are recorded in the profit and loss account. To illustrate the entries to close beginning inventories and to record ending balances, assume the following data:

Inventories, January 1, 1953: Raw Materials, \$30,000; Goods in Process, \$25,000; Finished Goods, \$40,000.

Charges incurred during 1953: Raw Materials Purchases, \$110,000; Direct Labor, \$140,000; Manufacturing Expenses, \$80,000.

Inventories, December 31, 1953: Raw Materials, \$40,000; Goods in Process, \$35,000; Finished Goods, \$50,000.

The entries to close the beginning inventories and to record the ending inventories follow:

To close the beginning inventory balances:	Manufacturing.....	30,000	
	Raw Materials Inventory.....		30,000
	Manufacturing.....	25,000	
	Goods in Process Inventory...		25,000
	Profit and Loss .....	40,000	
	Finished Goods Inventory....		40,000
To record the ending inventory balances:	Raw Materials Inventory.....	40,000	
	Manufacturing.....		40,000
	Goods in Process Inventory.....	35,000	
	Manufacturing.....		35,000
	Finished Goods Inventory.....	50,000	
	Profit and Loss.....		50,000

After manufacturing costs are closed into the manufacturing account, the inventory and summary accounts are as follows:

RAW MATERIALS INVENTORY			
Beginning Inventory	30,000	To Manufacturing	30,000
Ending Inventory	40,000		

GOODS IN PROCESS INVENTORY			
Beginning Inventory	25,000	To Manufacturing	25,000
Ending Inventory	35,000		

## FINISHED GOODS INVENTORY

Beginning Inventory	40,000	To Profit and Loss	40,000
Ending Inventory	50,000		

## MANUFACTURING

Beginning Raw Materials Inventory	30,000	Ending Raw Materials Inventory	40,000
Beginning Goods in Process Inventory	25,000	Ending Goods in Process Inventory	35,000
Raw Materials Purchases	110,000		
Direct Labor	140,000		
Manufacturing Expense	80,000		

(Balance, \$310,000, Cost of Goods Manufactured)

## PROFIT AND LOSS

Beginning Finished Goods Inventory	40,000	Ending Finished Goods Inventory	50,000
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In closing the accounts, the balance in the manufacturing account representing the cost of goods manufactured is transferred to the profit and loss account; the latter account then shows the cost of goods sold. Remaining profit and loss items are transferred to the profit and loss account. The income tax liability is recorded, and the balance in the profit and loss account is then transferred to Earned Surplus. Summary, tax liability, and surplus accounts will appear as follows:

## MANUFACTURING

Beginning Raw Materials Inventory	30,000	Ending Raw Materials Inventory	40,000
Beginning Goods in Process Inventory	25,000	Ending Goods in Process Inventory	35,000
Raw Materials Purchases	110,000	Cost of Goods Manufactured to Profit and Loss	310,000
Direct Labor	140,000		
Manufacturing Expense	80,000		
	385,000		385,000

## PROFIT AND LOSS

Beginning Finished Goods Inventory	40,000	Ending Finished Goods Inventory	50,000
Cost of Goods Manufactured from Manufacturing	310,000	Income and Gains	515,000
Expenses and Losses	165,000		
Income Taxes	15,000		
Increase in Earned Surplus	35,000		
	565,000		565,000

*ESTIMATED INCOME TAXES PAYABLE*

	Estimated Income Taxes	15,000
<b>EARNED SURPLUS</b>		
	Increase from Profit and Loss	35,000

*Perpetual Inventories — The Trading Enterprise.* When the perpetual inventory plan is maintained, the inventory account instead of Purchases is debited upon the purchase of merchandise. When a sale takes place, two entries are required: (1) the sale is recorded in the usual manner, and (2) the merchandise removed from stock is recorded by a debit to Cost of Goods Sold and a credit to the inventory account. Subsidiary records for inventory items are normally maintained. Detailed increases and decreases in the various inventory items are reported in the subsidiary accounts, and the costs of goods purchased and sold are summarized in the merchandise controlling account. Physical counts of the merchandise are made at regular intervals during the period to check on the accuracy of the book record. In the event of discrepancies between the book record and actual amounts on hand, appropriate adjustments are made to bring the book record into agreement with the amounts determined by physical count. At the end of the period, the inventory account reflects the inventory on hand; the cost of goods sold account is closed into Profit and Loss. The inventory and cost of goods sold accounts, together with the other accounts affected in the closing process, will appear as follows:

**MERCHANDISE INVENTORY**

(Beginning Inventory) <sup>1</sup>	50,000	(Cost of Goods Sold)	300,000
(Purchases)	320,000		

(Balance, \$70,000, Ending Inventory)

**COST OF GOODS SOLD**

(Cost of Goods Sold)	300,000	To Profit and Loss	300,000
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**PROFIT AND LOSS**

Cost of Goods Sold	300,000	Income and Gains	515,000
Expenses and Losses	165,000		
Income Taxes	15,000		
Increase in Earned Surplus	35,000		
	515,000		515,000

<sup>1</sup>In this and the following illustration, items reported in parentheses are those which have been recorded currently; remaining entries are made in adjusting and closing the accounts at the end of the period.

## ESTIMATED INCOME TAXES PAYABLE

	Estimated Income Taxes	15,000
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## EARNED SURPLUS

	Increase from Profit and Loss	35,000
--	----------------------------------	--------

Even where the cost of goods sold is obtained by means of physical inventories, one may prefer to follow a closing procedure similar to the foregoing. The purchases account is closed into the merchandise inventory account. The merchandise account is then reduced to the ending inventory figure, a cost of goods sold account being opened and charged with the inventory decrease. Cost of Goods Sold is then closed into Profit and Loss as above.

*Perpetual Inventories — The Manufacturing Enterprise.* When perpetual inventories are maintained by a manufacturing enterprise, raw materials purchases are recorded by charges to Raw Materials Inventory. Materials removed from stores for processing result in a charge to Goods in Process Inventory and a credit to Raw Materials Inventory. Labor and manufacturing costs, likewise, are charged to Goods in Process Inventory. Finished Goods Inventory is debited and the goods in process inventory account is credited for the costs relating to goods completed and transferred into the finished goods stock from factory processing centers. The entry to record a sale is accompanied by an entry to record the cost of goods sold, Cost of Goods Sold being debited and Finished Goods Inventory credited. At the end of the period, inventory accounts reflect ending balances; the cost of goods sold account is closed into Profit and Loss. Normally, the raw materials, goods in process, and finished goods inventory accounts are controlling accounts, individual increases and decreases in the various inventory items being reported in the respective subsidiary ledgers. Frequently, such procedures are maintained as a part of a cost system designed to offer detailed information concerning job order or process costs. Perpetual inventory accounts and the cost of goods sold account, together with the other accounts affected in the closing process, will appear as follows:

## RAW MATERIALS INVENTORY

(Beginning Inventory)	30,000	(Materials Used in Processing)	100,000
(Raw Materials Purchases)	110,000		

(Balance, \$40,000, Ending Inventory)

## GOODS IN PROCESS INVENTORY

(Beginning Inventory)	25,000	(Cost of Goods Manufactured)	310,000
(Materials Used in Processing)	100,000		
(Direct Labor)	140,000		
(Manufacturing Expense)	80,000		

(Balance, \$35,000, Ending Inventory)

## FINISHED GOODS INVENTORY

(Beginning Inventory)	40,000	(Cost of Goods Sold)	300,000
(Cost of Goods Manufactured)	310,000		

(Balance, \$50,000, Ending Inventory)

## COST OF GOODS SOLD

(Cost of Goods Sold)	300,000	To Profit and Loss	300,000
	--		==

## PROFIT AND LOSS

Cost of Goods Sold	300,000	Income and Gains	515,000
Expenses and Losses	165,000		
Income Taxes	15,000		
Increase in Earned Surplus	35,000		
	--		
	515,000		515,000
	--		==

## ESTIMATED INCOME TAXES PAYABLE

	Estimated Income Taxes	15,000
--	------------------------	--------

## EARNED SURPLUS

	Increase from Profit and Loss	35,000
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Even when cost of goods sold for a manufacturing enterprise is to be obtained by means of physical inventories, one may prefer to follow a closing procedure similar to the foregoing. The raw materials purchases account is closed into the raw materials inventory account. The inventory account is then reduced to the ending inventory balance, Goods in Process Inventory being charged with the decrease in raw materials. Direct labor and manufacturing expense accounts are closed into Goods in Process Inventory. Goods in Process Inventory is then reduced to the ending inventory figure, Finished Goods In-

ventory being debited. Finished Goods Inventory is finally reduced to its ending balance, a cost of goods sold account being opened and charged with the inventory decrease. Cost of Goods Sold is closed into Profit and Loss as shown.

**ACCOUNTING REPORTS  
ON CASH VERSUS  
ACCRUAL BASIS**

In the preceding pages of this chapter, adjustments were made at the end of the period in the attempt to measure accurately income and expenses of the fiscal period. Income *earned* rather than income *received* in the form of cash, and expenses *incurred* rather than expenses *paid* were considered and given effect in the measurement of profit and loss. Statements recognizing income in the period when earned and expenses in the period when incurred are said to be prepared on the *accrual basis*. For most businesses, satisfactory measurement of operating results can be achieved only through use of the accrual basis of accounting.

Statements are said to be prepared on a *cash basis* when income and expenses are recognized only upon the receipt and the disbursement of cash. A pure cash basis recognizes income from the sale of goods and services only when collections from customers are made; it recognizes expenses only when payments are made for depreciable assets, goods, services, and other operating costs. There is no recognition of a bad debt loss, since there is no recognition of revenue until cash is received; there is no recognition of depreciation, since the entire cost of the plant or equipment item is recognized as expense at the time of its purchase and payment.

The federal government permits the filing of tax returns on the accrual basis or on the cash basis. But the cash basis for tax purposes is defined as a combination cash-accrual basis, since it is recognized that the application of a strict cash approach as suggested above might result in serious distortions in net income measurement; furthermore, a strictly cash approach would offer a means of shifting significant amounts of income from one year to another by control of cash receipts and disbursements. For tax purposes, the following requirements must be observed:

(1) When goods are sold, income from sales must include full recognition of sales on account, and cost of goods sold must include full recognition of purchases on account and inventories, even though the cash basis for reporting income is adopted. In the case of trading or manufacturing companies, then, the gross profit on sales will be the same regardless of cash or accrual reporting. Professional men or companies engaged in selling services, however, in adopting the cash basis would disregard receivables from clients for services rendered and would recognize as income only those amounts actually col-

lected from clients during the period for services of the past or present or for services to be rendered in the future.

(2) When income from receivables must be recognized, the taxpayer is given the option of recognizing as a loss from bad debts (a) those amounts actually written off as uncollectible during the period or (b) the amount anticipated to be uncollectible and established through satisfactory valuation procedures.

(3) In the case of acquisitions of plant and equipment, deductions from income are allowed only to the extent of the depreciation or amortization allocable to the current period regardless of the basis of accounting adopted.

(4) The policy that is adopted for reporting must be employed consistently each period.

Use of the cash basis, then, generally means the use of a hybrid system, with sales, purchases, depreciation, and bad debts being reported as on the accrual basis, but with the remaining income and expense items being measured on a cash basis without regard to accrued and deferred items. The cash basis offers certain advantages in the form of simpler and more economical bookkeeping. A summary of operations prepared on this basis may be acceptable when failure to recognize accruals and deferrals results in relatively minor errors of a compensating nature with no material effect upon the periodic profit or loss figures. When accruals and deferrals are significant in amount and vary from period to period, however, satisfactory income measurement would call for the appropriate recognition of these items by the adoption of the accrual basis.

#### **FROM TRANSACTIONS TO STATEMENTS**

PRECEDING pages have stressed the importance of accounting reports in modern economic society. The standard procedures used in recording transactions and events incident to the preparation of such reports have been recalled in brief. The treatment applied to these transactions and events is called the *accounting process*.

The accounting process includes the entire field of analyzing, classifying, recording, and summarizing as practiced by accountants. It includes the successive steps that constitute the bookkeeping or accounting cycle. It starts with the first written record of the transaction or the event and concludes with the final summarized accounting statements.

The significance of the accounting process and its universal applicability to every unit of whatever size in our economic society must be appreciated. While the process may be modified to suit conditions peculiar to the economic unit, parts that have been reviewed here are basic in accounting for every business unit.

## QUESTIONS

1. List and describe the steps in the periodic summary. State why each step is indispensable.
2. Distinguish between a pre-closing trial balance and a post-closing trial balance.
3. Explain the nature and the purpose of (a) adjusting entries, (b) closing entries, and (c) reversing entries.
4. (a) State a general rule that may be applied in the determination of when to reverse entries. (b) Give examples for both accrued income and accrued expense items where exceptions to the rule can be supported.
5. A member of the board of directors of the Monarch Co. suggests that depreciation be reported following the net income determination inasmuch as the depreciation did not cost the company anything currently. What reply would you make?
6. Payment of insurance in advance may be recorded in either (a) an expense account or (b) an asset account. Which method would you recommend? What periodic entries are required under each method?
7. The receipt of rentals in advance may be recorded in either (a) an income account or (b) a liability account. Which method would you recommend? What periodic entries are required under each method?
8. (a) Distinguish between physical and perpetual inventory methods. (b) Does a perpetual inventory method eliminate the need for physical counts of merchandise on hand?
9. Upon inspecting the books for Wiggins, Inc., you find that the beginning inventory was raised to the ending balance and the profit and loss account was credited for the variation between beginning and ending inventories in adjusting the accounts. Furthermore, in the preparation of the income statement, a summary of the inventory variation was given, and the net inventory increase was subtracted from purchases in calculating cost of goods sold. Evaluate these procedures.
10. Distinguish between accounting on a cash basis and on an accrual basis.
11. "Use of the cash basis generally means something less than full cash basis reporting." Explain.

## EXERCISES

1. D. A. Reed had his own \$1,000, 6-month note discounted at the bank on October 31. The entry to record the transaction was:

Cash . . . . .	970	
Deferred Interest Expense . . . . .	30	
Notes Payable . . . . .		1,000

- (a) What adjustment is required on December 31? What reversing entry, if any, is required? (b) What nominal account could be debited instead of Deferred Interest Expense? What adjustment would then be necessary? What reversing entry, if any, would be necessary?

2. Reed received rent of \$1,800 for 1 year on January 31. He recorded the transaction as follows:

Cash.....	1,800	
Unearned Rental Income.....		1,800

(a) What adjustment is required on December 31? What reversing entry, if any, is required? (b) What nominal account could have been credited instead of Unearned Rental Income? What adjustment would then be necessary? What reversing entry, if any, would be necessary?

3. In analyzing the accounts of L. S. Stone, the adjusting data listed below are determined on December 31, the end of an annual fiscal period. (a) What adjusting entry would be made for each item? (b) What reversing entry would be made for each item? (c) What sources would provide the information for each adjustment?

- (1) The unexpired insurance account shows a debit of \$450, representing the cost of a 3-year fire insurance policy dated September 1.
- (2) On November 1, Rental Income was credited for \$600, representing income from a subrental for a 3-month period beginning on that date.
- (3) Purchase of advertising supplies for \$400 during the year was recorded in the advertising expense account. On December 31 supplies of \$60 are on hand.
- (4) On August 1, \$750 was paid as rent for a 6-month period beginning on that date. The expense account Rent was debited.
- (5) Miscellaneous Office Expense was debited for office supplies of \$860 purchased during the year. On December 31 office supplies of \$280 are on hand.
- (6) Interest expense includes a note discount charge of \$4 applicable to January of the following year.
- (7) Interest of \$12 is accrued on notes payable.

4. In analyzing the accounts for the W. D. Arnold Sales Corp., you find the following data. Give any entries that are required to correct and bring the books up to date on December 31, 1953. State which entries require reversing at the beginning of the new fiscal period.

- (1) The rental income account had been credited for rental receipts of \$3,600. On December 31, \$400 is unearned. In addition it is found that certain property was rented on November 1, 1953, at \$150 per month, but the rent for November and December will not be received until February 1, 1954.
- (2) Advertising expense was debited for \$800, the cost of advertising supplies purchased. There are supplies of \$120 on hand. In addition, a contract for radio advertising for 1 year beginning December 1, 1953, was made. The rate is \$120 for a 3-month period payable at the end of each such period.
- (3) It is found that the following adjustments were overlooked in closing the books on December 31, 1952:
  - (a) Depreciation on store equipment, \$50.
  - (b) Accrued interest on notes payable, \$60.
  - (c) Interest received in advance on notes receivable, \$25.
  - (d) Insurance paid in advance, \$40 (Miscellaneous Expense is debited for insurance payments).

5. Upon inspecting the accounts for the Proctor Co. at the end of 1953, you find the following data. What entries are required to correct the accounts?

- (a) A sale of merchandise for \$600 had been made on December 31, 1952. The merchandise, cost \$450, was delivered to the customer on this date and was not included in the ending inventory. However, the sale was not recorded until remittance was received on January 10, 1953.
- (b) 50 shares of X Company stock were sold at \$60 per share on July 8, 1953. The bookkeeper debited Cash and credited the investment account for proceeds from the sale, \$3,000. The investment account shows that 100 shares of this stock were originally acquired at a cost of \$7,500.
- (c) Raw materials, cost \$400, received on December 31, 1952, had been included in the inventory of raw materials taken on that date. However, the materials were recorded as a purchase on January 4, 1953, when the invoice was received.
- (d) Equipment, cost \$6,000, acquired on July 1, 1949, depreciated on a 5-year basis, was destroyed by fire on May 1, 1953. Cash was debited and Equipment was credited for \$800, the proceeds from an insurance policy.

6. Some of the accounts that appear in the ledger of the Mills Manufacturing Co. on November 30, the end of an annual fiscal period, follow:

Raw Materials Inventory	\$ 60,000	Direct Labor	\$130,000
Goods in Process Inventory	50,000	Manufacturing Expenses	100,000
Finished Goods Inventory	70,000	Sales	800,000
Raw Materials Purchases	340,000	Operating Expenses	150,000

Physical inventories on November 30 are: Raw Materials, \$80,000; Goods in Process, \$60,000; Finished Goods, \$60,000. The federal income tax liability is estimated at 30% of net income.

Assuming no further adjustments, give the entries required to adjust and close the accounts according to two different methods.

7. Reiss and Taylor, attorneys, summarize income on a cash basis. Their net income for 1953 is calculated at \$14,600. What income would they have shown for the year if income had been calculated on the accrual basis and the following adjusting data were recognized?

	JANUARY 1, 1953	DEC. 31, 1953
Receivables from clients	\$12,000	\$10,600
Office supplies on hand	310	360
Unearned retainer income	1,600	3,000
Miscellaneous accrued expenses	450	300

8. The income statement for the Blaine Co. for 1953 shows: interest income, \$805; interest expense, \$1,240. A comparative balance sheet at the end of 1953 reports:

	JANUARY 1, 1953	DEC. 31, 1953
Accrued interest receivable	\$140	\$305
Deferred interest income	200	160
Accrued interest payable	125	540
Deferred interest expense	150	300

What were the amounts of interest cash received and paid in 1953?

## PROBLEMS

**4-1.** The trial balance of the Kent Corporation shows among other items the following balances on December 31, 1953, the end of a fiscal year:

Accounts Receivable.....	\$22,500	
4½% Bonds of Allen Corporation.....	25,000	
Buildings.....	90,000	
Allowance for Depreciation of Buildings.....		\$ 7,000
Land.....	50,000	
5% First Mortgage Bonds.....		100,000
Rental Income.....		26,000
Office Expense.....	800	

The following facts are ascertained on this date upon inspection of the records of the company:

- It is estimated that approximately 5% of accounts receivable may prove uncollectible.
- Interest is receivable semiannually on the Allen Corporation Bonds on March 1 and September 1.
- Buildings are depreciated at 2½% a year; however, there were building additions of \$20,000 during the year. The company computes depreciation on fixed asset acquisitions during the year at one half the annual rate.
- Interest on the first mortgage bonds is payable semiannually on February 1 and August 1.
- Rental Income includes \$1,800 that was received on October 1, representing rent on part of the buildings for the period October 1, 1953, to September 30, 1954.
- Office Supplies of \$350 are on hand on December 31. Purchases of office supplies were charged to the office expense account.

*Instructions:* (1) Prepare the journal entries to adjust the books on December 31, 1953.

(2) Give the reversing entries that would be made at the beginning of 1954.

**4-2.** The trial balance of the Walsh Company shows among other items the following balances on December 31, 1953, the end of a fiscal year:

Accounts Receivable.....	\$22,500	
Allowance for Doubtful Accounts.....		\$ 180
3½% Bonds of Blakely, Inc.....	30,000	
Buildings.....	75,000	
Allowance for Depreciation of Buildings.....		1,500
Unexpired Insurance.....	430	
Notes Payable.....		7,500
Unearned Rental Income.....		1,400
Advertising Expense.....	3,000	
Interest Income.....		360

The following facts are ascertained on this date upon inspection of the records of the company:

- After careful examination of the accounts receivable, it was estimated that the Allowance for Doubtful Accounts should be brought up to 2% of the accounts receivable.

- (b) Interest on the bonds of Blakely, Inc. is collected semiannually on March 1 and September 1.
- (c) Buildings are depreciated at 3% per year; however, there were building additions during the year costing \$15,000. The company computes depreciation on fixed asset acquisitions during the year at one half the annual rate.
- (d) The \$7,500 note was issued on August 31, 1953, and accrues interest at 6%, which is payable upon maturity of the note, August 31, 1954.
- (e) Payments for insurance coverage were made as follows:

POLICY DATES	COVERAGE (YEARS)	PREMIUM
May 1, 1952	3	\$180
Sept. 30, 1953	1	140
Nov. 30, 1953	1	150

- (f) The unearned rental income account was credited for \$1,400 on August 1, 1953, representing rental from August 1, 1953, to April 1, 1954.
- (g) Advertising materials of \$900 were purchased from January 1 to December 31 and were charged to the advertising expense account. No materials were on hand on January 1, 1953. Approximately two thirds of the materials purchased had been used up by December 31, 1953.
- (h) It is determined that \$35 of the \$360 interest income balance is unearned on December 31, 1953.

*Instructions:* (1) Prepare the journal entries to adjust the books on December 31, 1953.

- (2) Prepare the reversing entries that would be made on January 1, 1954.

**4-3.** The following data were compiled for the Allied Supplies Corp. on December 31, 1953, the close of an annual fiscal period:

- (a) On December 1, 1953, part of the building space was sublet by the company. \$450 was collected, representing rent for a 6-month period. Unearned Rental Income was credited for the cash received.
- (b) \$180 was paid on a 3-year insurance policy dated October 1, 1953. Unexpired Insurance was debited for the payment.
- (c) On November 1, 1953, the company borrowed cash on a \$7,500 1-year, non-interest-bearing note. The note was discounted by the bank at 6%. The discount was recorded as Interest Expense.
- (d) A \$5,000, 6-month note dated October 1 had been received from a customer. Interest at 6% is payable at maturity.
- (e) Bonds of \$100,000 are outstanding. Interest at 4½% is payable semiannually on February 1 and August 1.
- (f) A 1-year, non-interest-bearing note for \$2,500, dated October 31, 1953, was received from a customer. The customer was credited for \$2,500 less discount at 6%. Interest Income was credited for the discount.
- (g) Delivery equipment acquired on August 1, 1953, for \$6,000 has an estimated life of 4 years with an estimated trade-in value of \$600 at that time.

*Instructions:* (1) Give the necessary adjusting entries.

- (2) List the letters of those entries that should be reversed at the beginning of 1954.

**4-4.** The following data are compiled for Hearne Manufacturers, Inc. on December 31, 1953, the close of an annual fiscal period:

- (a) Interest of \$75 is accrued on notes receivable.
- (b) Office Expense was debited for purchases of office supplies. Supplies of \$40 are on hand.
- (c) On December 31, 1953, the allowance for bad debts account has a credit balance of \$125. The account is to be maintained at 4% of accounts receivable. Accounts receivable on December 31, 1953, are \$8,000.
- (d) Salaries and wages accrued on December 31, 1953, are \$525.
- (e) The account Unexpired Insurance has been debited during the year, 1953, for the costs of insurance and shows a balance of \$550. The total of the unexpired portions of the policies is \$290 on December 31, 1953.
- (f) Machinery and equipment costing \$48,000 was purchased on July 1, 1953. The estimated life is 5 years and the estimated scrap value is \$6,000.
- (g) A portion of the building was subleased for 3 months, November 1, 1953, to February 1, 1954. Deferred Rental Income was credited for \$450, the full amount received.
- (h) The account Interest Income has been credited during the year, 1953, for interest and shows a balance of \$75. However, of that amount, \$20 is unearned on December 31, 1953.

*Instructions:* (1) Give the necessary adjusting entries on December 31, 1953.

(2) List the letters of those entries that should be reversed at the beginning of 1954.

**4-5.** The following facts are ascertained from the books and records of the Cook Company at the end of the first year of operations:

- (a) On December 21, 1953, \$9,000 was borrowed from the First State Bank on a 30-day note. The bank deducted interest of \$45 in advance on the loan and a nominal account was charged for the discount.
- (b) On September 1, 1953, \$750 was collected for one year's rent beginning on that date. The credit was made to a balance sheet account.
- (c) \$15,000 of 4½% bonds of the Mason Co. were purchased on March 15, 1953. Interest on the bonds is receivable semiannually on May 1 and November 1.
- (d) A truck was acquired on August 1, 1953, for \$4,000. The estimated life is 6 years, with a trade-in value of \$400.
- (e) A 45-day, non-interest-bearing note was received on December 16, 1953. A discount of \$75 was deducted and credited to a nominal account.
- (f) A real account was debited on October 20, 1953, for \$162, representing the payment of the premium on a 3-year fire insurance policy dated October 1, 1953.
- (g) On December 31, 1953, the allowance for bad debts account has a debit balance of \$125. The account is to be maintained at 3% of accounts receivable. Accounts receivable on December 31, 1953, are \$12,500.
- (h) The payroll for the week ending January 4, 1954, will be \$1,400. Of this amount \$600 had been earned by the employees during the period December 29-31.

*Instructions:* (1) Give the adjusting entries on December 31, 1953.

(2) List the letters of those entries that should be reversed.

**4-6.** The following information is available with respect to transactions of the Patterson Publishing Company, which began operations in 1953:

- (a) Cash collections on annual subscriptions to their monthly magazine during the last six months of 1953 were as follows:

July . . . . .	\$9,000	October . . . . .	\$ 6,500
August . . . . .	8,000	November . . . . .	7,500
September . . . . .	6,200	December . . . . .	10,000

The subscriptions are effective as of the start of the month following receipt of the subscription.

- (b) Payments for insurance coverage were made as follows:

POLICY DATE	COVERAGE (YEARS)	PREMIUM
July 1	3	\$ 75
Sept. 30	1	90
Oct. 1	3	450
Nov. 30	1	45

- (c) The annual real and personal property tax paid on December 5, 1953, was \$520. The bill covers the city's fiscal year beginning July 1, 1953.
- (d) Advertising materials of \$750 were purchased from July 1 to December 31. No materials were on hand on July 1. Approximately one third of the materials purchased remains on hand on December 31.

*Instructions:* (1) Assuming that original entries for expense or income items in each of the above transactions were made to real accounts, give the necessary adjusting entries at the end of the 6-month period. (Give schedules following journal entries to show how amounts were calculated.)

(2) Assuming that original entries for expense or income items in each of the above transactions were made to nominal accounts, give the necessary adjusting entries.

(3) State which of the entries in parts (1) and (2) require reversing at the beginning of 1954.

**4-7.** A balance sheet for the Thomas Sales Company on January 1, 1953, reports the following balances:

Cash . . . . .	\$ 4,550	Accrued Salaries . . . . .	\$ 200
Accounts Rec. . . . .	\$3,000	Accrued Taxes . . . . .	150
Less Allowance		Accounts Payable . . . . .	4,300
for Bad Debts. . . . .	350	A. B. Thomas, Capital. . . . .	20,150
Inventories . . . . .	2,650		
Furniture . . . . .	14,500		
Less Allowance			
for Depreciation . . . . .	3,600		
Unexpired Ins. . . . .	600		
	3,000		
	100		
	<u>\$24,800</u>		<u>\$24,800</u>

Transactions for 1953 are summarized below:

Sales on account . . . . .	\$102,000
Purchases on account . . . . .	67,500
Sales returns (credits were made to customers' accounts) . . . . .	1,500
Cash collected on accounts receivable . . . . .	97,000

Discounts allowed on accounts collected.....	1,200	
Uncollectible accounts written off against allowance.....	300	
Cash paid on accounts payable.....	64,000	
Discounts taken on accounts paid.....	800	
Operating expenses paid.....	24,000	
Withdrawals for personal use:		
Merchandise (cost).....	\$ 2,000	
Cash.....	<u>16,000</u>	18,000
Cash received on issuance to bank of a \$6,000, 6-month note on November 1, on which bank deducted interest in advance.....		5,820

In addition to the foregoing information, the following data are to be considered on December 31: inventories, \$18,000; unexpired insurance, \$250; accrued salaries, \$300; and accrued taxes, \$200. Depreciation of furniture for the year is \$300. The balance in the allowance for bad debts account is increased by \$150.

*Instructions:* Prepare an income statement, a balance sheet, and a statement of changes in the owner's capital account for the year ended December 31, 1953. (T accounts or working papers should be used in developing statement data.)

4-8. The Goodyear Sales Outlet is organized on January 1, 1953, selling its total authorized stock for cash at par, \$60,000. Transactions for the next six months follow:

Payments for equipment.....	\$ 18,000
Sales on account.....	142,000
Purchases on account.....	166,000
Cash borrowed on long-term notes ..	40,000
Operating expenses paid.....	42,000
Purchases returns and allowances (charges were made to creditors' accounts).....	2,000

A cash dividend of \$2,000 is declared in June, payable July 15. On June 30 there are accounts of trade debtors of \$40,000 that have not been collected; sales discounts of \$1,200 were allowed on accounts collected. On June 30 there are also accounts of trade creditors of \$30,000 that have not been paid. An allowance for bad debts of \$650 is to be established on accounts receivable on hand. The merchandise inventory on this date is \$76,500. Depreciation for the six months is estimated at \$600. In addition, adjustments are to be made for the following deferred and accrued items as of June 30:

Unexpired insurance.....	\$500
Advances to employees ..	550
(Insurance and advances were recorded as operating expenses during the period.)	
Accrued interest on notes payable ..	750
Accrued salaries.....	350
Accrued payroll and property taxes ..	400

The income taxes for 1953 are estimated at 40% of the net income.

*Instructions:* Prepare an income statement, a balance sheet, and an earned surplus statement for the six-month period ended June 30, 1953. (T accounts or working papers should be used in developing statement data.)

# *The Accounting Process Illustrated*

### **STEPS IN THE ACCOUNTING PROCESS**

The accounting process as described in the preceding chapters is composed of a number of steps in well-defined sequence. To review, these steps consist of:

(1) The entry of the transactions in chronological order in the books of original entry.

(2) The transfer of transactions as classified and summarized in the journals to the appropriate accounts in the ledgers.

(3) The preparation of a trial balance of the accounts in the general ledger and the reconciliation of supporting data in the subsidiary ledgers with respective controlling accounts.

(4) The compilation of the data required in bringing the accounts up to date.

(5) Preparation of the work sheet.

(6) Preparation of the accounting statements and supporting schedules.

(7) The adjustment of accounts and the closing of all nominal account balances.

(8) The preparation of a post-closing trial balance.

(9) The reversal of entries that were made to establish accrued and deferred income and expense balances.

The entire course of the accounting process is illustrated in the example that appears on the following pages. The books of original entry for a hypothetical company, the Martin Manufacturing Company, are described. Data in the journals are transferred to the ledger, and the work involved in the periodic summary at the end of a fiscal year is then illustrated.

### **BOOKS OF ORIGINAL ENTRY**

The Martin Manufacturing Company maintains the following books of original entry: a sales journal, a sales returns and allowances journal, a cash receipts journal, a voucher register, a check register, and a general journal.

*Sales Journal.* The sales journal maintained by the Martin Manufacturing Company for the month of December as summarized at the end of the month is shown on the following page.

## SALES JOURNAL

CASH DR	ACCOUNTS RECEIVABLE DR	DATE	DESCRIPTION	SALES CR	SALES TAXES PAYABLE CR
245 00	816 00	31	Sales on account for day	800 00	16 00
		31	Cash sales for day	240 00	5 00
8,130 00	24,500 00	31	Totals	32,000 00	650 00
(✓)	(116)			(41)	(218)

One entry is made to record the sales on account for each day. Accounts Receivable is debited for the total of the sales on account, including the amount of the sales taxes; Sales and Sales Taxes Payable are credited. Debits are posted to the individual customers' accounts in the accounts receivable ledger directly from the sales invoices.

One entry is also made for the cash sales for each day. Cash is debited and Sales and Sales Taxes Payable are credited.

*Sales Returns and Allowances Journal.* The sales returns and allowances journal maintained by the Martin Manufacturing Company is illustrated below.

## SALES RETURNS AND ALLOWANCES JOURNAL

DATE	DESCRIPTION	ACCOUNTS RECEIVABLE CR	SALES RETURNS AND ALLOWANCES DR	SALES TAXES PAYABLE DR
31	Sales returns and allowances for day	51 00	59 00	1 00
31	Totals	490 00	430 00	10 00
		(116)	(041)	(218)

One entry is made to record the sales returns and allowances for each day. Sales Returns and Allowances and Sales Taxes Payable are debited; Accounts Receivable is credited. Credits are posted to the individual customers' accounts in the accounts receivable ledger directly from the credit memorandums.

*Cash Receipts Journal.* The cash receipts journal maintained by the Martin Manufacturing Company is shown on the opposite page.

## CASH RECEIPTS JOURNAL

CASH DR	SALES DISCOUNT DR	DATE	ACCOUNT CREDITED	POST RIT	GENERAL CR	SALES CR	ACCOUNTS RECEIVABLE CR
6,565 00		31	Notes Re- ceivable	113	6,500 00		
			Interest In- come	72	65 00		
10,000 00		31	Notes Paya- ble	211	10,000 00		
1,050 00	10 00	31	Accounts Receivable	✓			1,060 00
245 00		31	Sales	✓		245 00	
47,810 00	255 00	31	Totals	✓	16,565 00	8,150 00	23,350 00
(111)	(81)				(✓)	(✓)	(116)

One entry is made each day for the total amount collected on accounts receivable. In this entry Cash and Sales Discount are debited and Accounts Receivable is credited. Credits are posted to the individual customers' accounts in the accounts receivable ledger from a separate list of receipts on account maintained by the cashier.

In order to maintain the cash receipts journal as a complete record of all cash received, an entry for cash sales is made each day. This entry is also made in the sales journal so that that journal will have a complete record of sales. To avoid double posting of the transaction, the total of the Cash Dr. column in the sales journal and the total of the Sales Cr. column in the cash receipts journal are checked and are not posted. As a result, the debit to Cash for cash sales is posted from the cash receipts journal as a part of the total of the Cash Dr. column, and the credit to Sales for cash sales is posted from the sales journal as a part of the total of the Sales Cr. column.

*Voucher Register.* The voucher register maintained by the Martin Manufacturing Company appears across the top of pages 112 and 113.

The Martin Manufacturing Company does not maintain an expenses control account and therefore has a number of separate columns for expenses in its voucher register. The total of each amount column is posted to the corresponding account, with the exception of the Payroll Dr. column and the General Dr. and Cr. columns.

The debits to the various accounts for salaries and wages are posted directly from the payroll records. The total of the amount thus posted must equal the total of the Payroll Dr. column in the voucher register.

## VOUCHER REGISTER

PAYROLL STATEMENT										
DATE	VCHR. NO.	NAME	PAID		ACCOUNTS PAYABLE Cr.	RAW MATERIALS PURCHASES Dr.	FREIGHT IN Dr.	PAYROLL Dr.		
			DATE	CHK. NO.						
21	31	5154	J. Harvey	12 31	4207	8,120				21
22										22
23	31	5155	Payroll	12/31	4208	1,780			2,000	23
24										24
25	31	5156	Columbia C. & E.			1,700				25
26	31	5157	Jackson Hardware			300				26
27	31	5158	Williams Supply			1,200	1,200			27
28	31	5159	Petty Cash	12 31	4210	100				28
29	31		Totals			37,020	6,800	400	15,300	29
						(213)	51	(52)	Posted to accounts as indicated by payroll records.	

The debits posted from the payroll records to the various salaries and wages accounts for the month of December are given below:

Direct Labor.....	\$ 6,500
Indirect Labor.....	1,900
Sales Salaries and Commissions.....	2,100
Delivery Salaries.....	800
Factory Superintendence.....	1,700
Officers Salaries.....	1,400
Office Salaries.....	900
	<hr/>
	\$15,300

One payroll record is kept for direct labor, indirect labor, sales salaries and commissions, and delivery salaries; another, for factory superintendence, officers salaries, and office salaries. The first group is paid weekly; the second, semimonthly. The entry for the payroll on December 31 in the voucher register across the double page above is for the second group only.

General debits reported in the voucher register for December total \$14,010 and are composed of the following items, the first five items representing vouchers recorded prior to December 31 and thus not shown in the partial record:

Employees Income Taxes Payable (November).....	\$ 2,000
Old-Age Benefit Taxes Payable (November).....	440
Sales Taxes Payable (November).....	720
Prepaid Insurance.....	250
Building Maintenance and Repair.....	480
Notes Payable.....	8,000
Interest Expense—Other.....	120
Factory Heat, Light, and Power.....	1,700
Tools.....	300
	<hr/>
	\$14,010

FOR MONTH OF DECEMBER, 1953

							GENERAL			
FACTORY SUPPLIES Dr	MISC FACTORY EXPENSE Dr	ADVERTISING Dr	MISC SELLING EXPENSE Dr	MISC DEPT EXPENSE Dr	OFFICE SUPPLIES Dr	MISC GEN EXP Dr	ACCOUNT	P R	AMOUNT	
									Dr	Cr
21							Notes Payable	211	8,000	21
22							Interest Expense — Other	83	120	22
23							Imp Income Taxes Pay	214		215
24							O A B Taxes Pay	215		5
25							Factory Ht., Lt., & Power	624	1 700	25
26							Tools	131	300	26
27										27
28		20		60	80					28
29	400	300	800	200	180	750	Totals		14 010	2,340
	(1110)	(626)	(632)	(633)	(642)	(1111)			(✓)	(✓)

General credits reported in the voucher register for December represent payroll income tax and old-age benefit tax withholdings. These are summarized for the month as follows:

Employees Income Taxes Payable	\$ 2,200
Old-Age Benefit Taxes Payable	140
	<u>\$ 2,340</u>

*Check Register.* The check register maintained by the Martin Manufacturing Company is illustrated below:

CHECK REGISTER

DATE	CHECK NO	PAYEE	VCHR NO	ACCOUNTS PAYABLE	PURCHASES DISCOUNT	CASH
				Dr	Cr	Cr
31	4207	J. Harvey	5114	8,120 00		8,120 00
31	4208	Payroll	5155	1,780 00		1,780 00
31	4209	R. A. Westmore	5006	2,000 00	20 00	1,980 00
31	4210	Petty Cash	5159	160 00		160 00
31		Totals		29,480 00	160 00	29,320 00
				(213)	(71)	(111)

*General Journal.* The general journal for the Martin Manufacturing Company on page 114 shows the entries for the month of December.

**POSTING; PREPARATION OF TRIAL BALANCE** Data in the journals are transferred to the accounts in the ledger at the end of December, and a trial balance is then taken. In order to conserve space here, the complete ledger of the Martin Manufacturing Company is not reproduced. Instead, the information that would appear in the ledger has been summarized in tabular form on page 115. The tabulation shows:

## GENERAL JOURNAL

DATE	DESCRIPTION	POST. REF.	DETAIL	DEBITS	CREDITS
1953 Dec.	1 Notes Receivable.....	113		6,000 00	
	Accounts Receivable.....	116			6,000 00
	H. A. Malley.....	AR	6,000 00		
	5 Notes Receivable Discounted.....	114		4,500 00	
	Notes Receivable.....	113			4,500 00
	12 Allowance for Bad Debts.....	0116		120 00	
	Accounts Receivable.....	116			120 00
	Arthur R. Jordan.....	AR	120 00		
	22 Accounts Payable.....	213		200 00	
	Rodger L. Welson.....	AP	200 00		
	Raw Materials Returns and Allow....	051			200 00
	31 Taxes.....	625		140 00	
	Old-Age Benefit Taxes Payable.....	215			140 00
	31 Taxes.....	625		270 00	
	State Unemployment Taxes Payable.....	216			270 00
	31 Taxes.....	625		30 00	
	Federal Unemployment Taxes Pay.....	217			30 00

(1) the trial balance of the Martin Manufacturing Company taken from its ledger on November 30, (2) the effects upon account balances of the information transferred from the books of original entry for the month of December, and (3) a trial balance as of December 31 formed by combining the transactions for December with the trial balance of November 30.

The letters in the parentheses preceding each amount in the transactions columns of the tabulation refer to the books of original entry on the previous pages from which the information was obtained. The identification letters used follow: VR, Voucher Register; CR, Cash Receipts Journal; CP, Check Register (Cash Payments); S, Sales Journal; P, Purchases Journal; SR, Sales Returns and Allowances Journal; and J, General Journal. These are the letters that are customarily used in the ledger to indicate the sources of information posted to the accounts.

### COMPILATION OF ADJUSTING DATA

In considering the adjustments to be applied to the trial balance in the preparation of the statements at the end of 1953, it is found that the accounts do not reflect the following information:<sup>1</sup>

<sup>1</sup>The adjusting data are numbered to correspond to the numbers given the adjustments on the work sheet on pages 118 to 121. Numbers (3), (4), and (5) do not appear in this list because the data for these adjustments, representing transfers of beginning inventories, already appear on the work sheet trial balance.

ACCOUNTS	TRIAL BALANCE NOVEMBER 30, 1953		TRANSACTIONS DECEMBER, 1953		TRIAL BALANCE DECEMBER 31, 1953	
	Dr	Cr	Dr	Cr	Dr	Cr
Cash	23,420		(CR) 47,816	(CP) 29,320	41,910	
Petty Cash	200				200	
Notes Receivable	21,000		(I) 6,000	(CR) 6,500 (J) 4,500	16,000	
Notes Receivable Discounted		14,500	(J) 4,500	(SR) 490		10,000
Accounts Receivable	57,460		(S) 24,500	(CR) 23,350 (J) 6,000 (J) 120	52,000	
Allowance for Bad Debts		730	(J) 120			610
Finished Goods Inventory	36,000				36,000	
Goods in Process Inventory	21,000				21,000	
Raw Materials Inventory	17,000				17,000	
Factory Supplies	5,100		(VR) 400		5,500	
Office Supplies	2,050		(VR) 750		2,800	
Prepaid Insurance	4,750		(VR) 250		5,000	
Burton Co. Common Stock	21,300				24,300	
Tools	9,700		(VR) 300		10,000	
Delivery Equipment	8,000				8,000	
Allowance for Depreciation of Delivery Equip.		3,600				3,600
Office Furniture and Fixtures	5,000				5,000	
Allowance for Depreciation of Office Furniture and Fixtures		1,600				1,600
Machinery and Equipment	64,000				64,000	
Allowance for Depreciation of Machinery and Equipment		9,300				9,300
Buildings	42,500				42,500	
Allowance for Depreciation of Buildings		6,800				6,800
Land	40,000				40,000	
Patents	6,500				6,500	
Goodwill	40,000				40,000	
Notes Payable		18,000	(VR) 8,000	(CR) 10,000		20,000
Accounts Payable		21,010	(CP) 29,480 (J) 200	(VR) 37,020		28,350
Employee Income Taxes Payable		2,000	(VR) 2,000	(VR) 2,200		2,200
Old Age Benefit Taxes Payable		140	(VR) 440	(VR) 140 (J) 140		280
State Unemployment Taxes Payable		530		(I) 270		800
Federal Unemployment Taxes Payable		250		(I) 30		280
Sales Taxes Payable		720	(VR) 720 (SR) 10	(S) 650		640
6 First Mortgage Bonds		100,000				100,000
6 Preferred Stock		50,000				50,000
Common Stock		150,000				150,000
Treasury Stock - Common	30,000				30,000	
Premium on Preferred Stock		2,000				2,000
Retained Surplus		50,140				50,450
Sales		333,000		(S) 32,000		365,000
Sales Returns and Allowances	4,520		(SR) 480		5,000	
Raw Materials Purchases	78,600		(VR) 6,800		85,400	
Raw Materials Returns and Allowances		1,300		(I) 200		2,100
Freight In	4,300		(CP) 400		4,700	
Direct Labor	69,700		(VR) 6,500		76,200	
Indirect Labor	20,700		(VR) 1,900		22,600	
Factory Superintendence	18,300		(VR) 1,700		20,000	
Building Maintenance and Repairs	2,520		(VR) 190		3,000	
Factory Heat, Light, and Power	18,780		(VR) 1,700		20,480	
Taxes	15,960		(I) 140 (I) 270 (J) 30		16,400	
Miscellaneous Factory Expense	3,000		(VR) 300		3,300	
Sales Salaries and Commissions	21,900		(VR) 2,100		24,000	
Advertising	7,700		(VR) 800		8,100	
Miscellaneous Selling Expense	2,000		(VR) 200		2,200	
Delivery Salaries	8,200		(VR) 800		9,000	
Miscellaneous Delivery Expense	1,920		(VR) 180		2,100	
Officers' Salaries	14,600		(VR) 1,400		16,000	
Office Salaries	9,100		(VR) 900		10,000	
Miscellaneous General Expense	2,080		(VR) 220		2,300	
Purchases Discount		2,020		(CP) 160		2,180
Interest Income		635		(CR) 65		700
Dividend Income		300				300
Sales Discount	2,845		(CR) 255		3,100	
Interest Expense - Bonds	5,000				5,000	
Interest Expense - Other	480		(VR) 120		600	
	769,785	769,785	153,155	153,155	807,190	807,190

(1) A dividend of \$1.50 per share, payable January 15 to stockholders of record December 31, has been declared on Burton Co. common stock. The Martin Manufacturing Company owns 200 shares of Burton Co. common stock as a long-term investment.

(2) Dividends on the Martin Manufacturing Company's stock have been declared and are payable on January 10 to stockholders of record December 26 as follows:

Regular quarterly dividend of \$1.50 on 500 shares of 6% preferred stock outstanding, par \$100.

Forty cents per share on 6,000 shares of common stock outstanding, par \$20 (7,500 shares of stock were originally issued, 1,500 shares being reacquired and held as treasury stock.)

The following adjusting data as of December 31, 1953, were compiled upon thorough examination of the company's books and records:

*Physical Inventories:*

- (6) Finished Goods Inventory, \$49,000.
- (7) Goods in Process Inventory, \$28,000.
- (8) Raw Materials Inventory, \$20,000.
- (9) Factory Supplies, \$1,200.
- (10) Office Supplies, \$700.

*Bad Debts:*

- (11) The allowance for bad debts is to be increased by  $\frac{1}{2}$  of 1% of net sales.

*Depreciation and amortization:*

- (12) Tools on hand are valued at \$7,500.
- (13) Delivery equipment depreciation, 20% a year.
- (14) Office furniture and fixtures depreciation, 10% a year.
- (15) Machinery and equipment depreciation, 5% a year.
- (16) Buildings depreciation, 4% a year.
- (17) Patents are to be reduced by \$500, the amortization for the year.

*Accrued Expenses:*

- (18) Salaries and wages:

Direct Labor	\$1,400
Indirect Labor	300
Sales Salaries and Commissions	400
Delivery Salaries	200
- (19) Interest accrued on bonds payable, \$1,000.
- (20) Interest accrued on notes payable, \$600.

*Prepaid Expenses:*

- (21) Prepaid insurance, \$2,600.
- (22) Prepaid interest on notes payable, \$300.

*Accrued Income:*

- (23) Accrued interest on notes receivable, \$200.

*Deferred Income:*

- (24) Unearned interest on notes receivable, \$100.

*Income Taxes:*

- (25) Provision is to be made for federal and state income taxes at 40% of earnings.

Building expenses, expired insurance, and taxes are to be distributed as follows: to manufacturing operations, 85%; to general and administrative operations, 15%.

Earned surplus of the company was \$52,700 on January 1, 1953, and has been affected only by dividends declared on preferred stock prior to recording the foregoing data.

#### **PREPARATION OF THE WORK SHEET**

The next step in the accounting process is to combine the adjusting data with the information on the trial balance in order to bring the accounts up to date. This is done and the accounting statements are developed through the preparation of a work sheet. In the construction of the work sheet, trial balance data are listed in the first two amount columns. The adjusting entries are listed in the second pair of columns. Sometimes a third pair of columns is included to show the trial balance after adjustment. Account balances as adjusted are carried to the appropriate statement columns and serve as the basis for the preparation of the accounting statements. A work sheet for a manufacturing concern usually includes a pair of columns for (a) manufacturing accounts, (b) profit and loss accounts, and (c) balance sheet accounts. A similar work-sheet form would be used for a trading concern except for the absence of manufacturing columns.

The work sheet for the Martin Manufacturing Co. is shown on pages 118 to 121.

The adjustments to the inventory accounts should be particularly noted. Items (1) and (5) are entered as debits to Manufacturing and as credits to Goods in Process Inventory and Raw Materials Inventory respectively. The purpose of these entries is to transfer the beginning inventory costs to the manufacturing account.

Entries (7) and (8) are debits to Goods in Process Inventory and Raw Materials Inventory respectively and credits to Manufacturing. The purpose of these entries is to record the goods in process and raw material inventories at the end of the fiscal period and to reduce manufacturing costs by the ending inventories.

Both the debit and the credit amounts in the manufacturing account are carried to the manufacturing columns. This is done in order that the manufacturing columns may include all the information that is required in preparing the schedule of cost of goods manufactured.

Adjustment (3) is a debit to Profit and Loss and a credit to Finished Goods Inventory, while adjustment (6) is a debit to Finished Goods Inventory and a credit to Profit and Loss. Entry (3) transfers

## MARTIN MANUFAC

## WORK

DECEMBER

	NAME OF ACCOUNT	TRIAL BALANCE		ADJUSTMENTS		
		Dr.	Cr.	Dr.	Cr.	
1	Cash	41,910			.....	1
2	Petty Cash	200			.....	2
3	Notes Receivable	16,000			.....	3
4	Notes Receivable Discounted		10,000		.....	4
5	Accounts Receivable	52,000			.	5
6	Allowance for Bad Debts		610	(11)	1,800	6
7	Finished Goods Inventory	36,000		(6)	49,000	7
8	Goods in Process Inventory	21,000		(7)	28,000	8
9	Raw Materials Inventory	17,000		(8)	20,000	9
10	Factory Supplies	5,500		(5)	17,000	10
11	Office Supplies	2,800		(9)	4,300	11
12	Prepaid Insurance	5,000		(10)	2,100	12
13	Burton Co. Common Stock	24,300		(21)	2,400	13
14	Tools	10,000		(12)	2,500	14
15	Delivery Equipment	8,000				15
16	Allow. for Depr. of Del. Equip.		3,600	(13)	1,600	16
17	Office Furniture and Fixtures	5,000				17
18	Allowance for Depreciation of Office Furniture and Fixtures		1,600	(14)	500	18
19	Machinery and Equipment	64,000				19
20	Allowance for Depreciation of Machinery & Equipment		9,300	(15)	3,200	20
21	Buildings	42,500				21
22	Allow. for Depr. of Buildings		6,800	(16)	1,700	22
23	Land	40,000				23
24	Patents	6,500		(17)	500	24
25	Goodwill	40,000				25
26	Notes Payable		20,000			26
27	Accounts Payable		28,350		.	27
28	Employees Income Taxes Pay.		2,200		.	28
29	Old-Age Benefit Taxes Payable		280			29
30	State Unemployment Taxes Pay.		800			30
31	Fed. Unemployment Taxes Pay.		280			31
32	Sales Taxes Payable		640			32
33	6% First Mortgage Bonds		100,000			33
34	6% Preferred Stock		50,000			34
35	Common Stock		150,000			35
36	Treasury Stock - Common	30,000			...	36
37	Premium on Preferred Stock		2,000			37
38	Earned Surplus		50,450	(2)	3,150	38
39	Sales		365,000		.	39
40	Sales Returns and Allowances	5,000			.	40
41	Raw Materials Purchases	85,400			.	41
42	Raw Mat. Returns and Allow.		2,100			42
43	Freight In	4,700				43
44	Direct Labor	76,200		(18)	1,400	44
45	Indirect Labor	22,600		(18)	300	45
46	Factory Superintendence	20,000				46
47	Bldg. Maintenance & Repairs	3,000				47
48	Factory Heat, Light, and Power	20,480				48
49	Taxes	16,400			.	49
50	Miscellaneous Factory Expense	3,300			.	50
51	Sales Salaries and Commissions	24,000		(18)	400	51
52	Advertising	8,100			.....	52
53	Miscellaneous Selling Expense	2,200			.....	53
54	Delivery Salaries	9,000	.....	(18)	200	54

## TURING COMPANY

## SHEET

31, 1953

	MANUFACTURING		PROFIT AND LOSS		BALANCE SHEET		
	DR.	CR.	DR.	CR.	DR.	CR.	
1					41,910		1
2					200		2
3					16,000		3
4						10,000	4
5					52,000		5
6						2,410	6
7					49,000		7
8					28,000		8
9					20,000		9
10					1,200		10
11					700		11
12					2,600		12
13					24,300		13
14					7,500		14
15					8,000		15
16						5,200	16
17					5,000		17
18						2,100	18
19					64,000		19
20						12,500	20
21					42,500		21
22						8,500	22
23					40,000		23
24					6,000		24
25					40,000		25
26						20,000	26
27						28,350	27
28						2,200	28
29						280	29
30						800	30
31						280	31
32						640	32
33						100,000	33
34						50,000	34
35						150,000	35
36					30,000		36
37						2,000	37
38						47,300	38
39							39
40			5,000	365,000			40
41	85,400						41
42		2,100					42
43	4,700						43
44	77,600						44
45	22,900						45
46	20,000						46
47	2,550		450				47
48	20,480						48
49	13,940		2,460				49
50	3,300						50
51			24,400				51
52			8,100				52
53			2,200				53
54	.....		9,200				54

## WORK SHEET (Continued)

NAME OF ACCOUNT		TRIAL BALANCE		ADJUSTMENTS				
		DR.	CR.	DR.		CR.		
55	Miscellaneous Delivery Expense	2,100						55
56	Officers Salaries	16,000						56
57	Office Salaries	10,000						57
58	Miscellaneous General Expense	2,300						58
59	Purchases Discount		2,180					59
60	Interest Income		700	(24)	100	(23)	200	60
61	Dividend Income		300			(1)	300	61
62	Sales Discount	3,100						62
63	Interest Expense — Bonds	5,000		(19)	1,000			63
64	Interest Expense — Other	600		(20)	600	(22)	300	64
65		807,190	807,190					65
66	Dividends Receivable			(1)	300			66
67	Div. Pay. on Preferred Stock					(2)	750	67
68	Div. Pay. on Common Stock					(2)	2,400	68
69	Profit and Loss			(3)	36,000	(6)	49,000	69
70	Manufacturing			(4)	21,000	(7)	28,000	70
71				(5)	17,000	(8)	20,000	71
72	Factory Supplies Used			(9)	4,300			72
73	Office Supplies Used			(10)	2,100			73
74	Loss from Bad Debts			(11)	1,800			74
75	Tools Expense			(12)	2,500			75
76	Depreciation of Delivery Equip.			(13)	1,600			76
77	Depr. of Office Fur. and Fix.			(14)	500			77
78	Depr. of Machinery and Equip.			(15)	3,200			78
79	Depreciation of Buildings			(16)	1,700			79
80	Patents Expense			(17)	500			80
81	Accrued Salaries and Wages					(18)	2,300	81
82	Accrued Interest on Bonds Pay.					(19)	1,000	82
83	Accrued Interest on Notes Pay.					(20)	600	83
84	Expired Insurance			(21)	2,400			84
85	Prepaid Interest on Notes Pay.			(22)	300			85
86	Accrued Interest on Notes Rec.			(23)	200			86
87	Unearned Interest on Notes Rec.					(24)	100	87
88					199,550		199,550	88
89	Cost of Goods Manufactured							89
90								90
91								91
92	Estimated Income Taxes Pay.							92
93	Net Income after Income Taxes							93
94								94

the beginning inventory of finished goods to profit and loss, while entry (6) records the ending inventory of finished goods and reports this item as a deduction from costs.

In carrying the profit and loss adjustments to the profit and loss columns, both debit and credit amounts are shown. This is done so

## WORK SHEET (Continued)

MANUFACTURING		PROFIT AND LOSS		BALANCE SHEET	
DR	CR	DR	CR	DR.	CR.
55		2,100			
56		16,000			
57		10,000			
58		2,300			
59			2,180		
60			300		
61			600		
62		3,100			
63		6,000			
64		900			
65					
66				300	
67					750
68					2,400
69		36,000	49,000		
70	21,000	28,000			
71	17,000	20,000			
72	4,300				
73		2,100			
74		1,800			
75	2,500				
76		1,600			
77		500			
78	3,200				
79	1,445	255			
80	500				
81					2,300
82					1,000
83					600
84	2,040	360			
85				300	
86				200	
87					100
88	302,855	50,100			
89		252,755	252,755		
90	302,855	302,855			
91		387,580	417,580	479,710	449,710
92		(25) 12,000			12,000
93		18,000			18,000
94		417,580	417,580	479,710	479,710

that the profit and loss columns may show all the information that is required in the development of the cost of goods sold section of the income statement.

A number of different methods may be used in recording inventory data on the work sheet. A simple procedure would be the following:

NAME OF ACCOUNT	TRIAL BALANCE		ADJUSTMENTS		MANUFACTURING		PROFIT AND LOSS		BALANCE SHEET	
	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.	Dr.	Cr.
Finished Goods Inventory 1/1, 19--	26,000						36,000			
Goods in Process Inventory 1/1, 19--	21,000				21,000					
Raw Materials Inventory 1/1, 19--	17,000				17,000					
<hr/>										
Finished Goods Inventory 12 31, 19--								49,000	19,000	
Goods in Process Inventory 12 31, 19 --					28,000				28,000	
Raw Materials Inventory 12 31, 19 --					20,000				20,000	

In the foregoing example, beginning inventories in the trial balance are carried to the manufacturing and the profit and loss columns; ending inventories are listed below the trial balance and are reported directly as credits in the manufacturing and the profit and loss columns

MARTIN MANUFACTURING  
BALANCE  
DECEMBER

ASSETS			
Current assets:			
Cash on hand and in bank		42,110	
Accrued interest and dividends receivable		500	
Notes receivable	16,000		
Less: Notes receivable discounted	10,000	6,000	
Accounts receivable	52,000		
Less: Allowance for bad debts	2,410	49,590	
Inventories:			
Finished goods	49,000		
Goods in process	28,000		
Raw materials	20,000		
Factory supplies	1,200	98,200	
Prepaid expenses:			
Office supplies, prepaid insurance, and interest		3,600	
Total current assets			200,000
Investments:			
Burton Co. common stock			24,300
Plant and equipment:			
	Cost	Allowance for Depreciation	
Tools	7,500		7,500
Delivery equipment	8,000	5,200	2,800
Office furniture and fixtures	5,000	2,100	2,900
Machinery and equipment	64,000	12,500	51,500
Buildings	42,500	8,500	34,000
Land	40,000		40,000
Total plant and equipment	167,000	28,300	138,700
Intangible assets:			
Patents		6,000	
Goodwill		40,000	
Total intangible assets			46,000
Total assets			409,000

and as debits in the balance sheet columns without their prior inclusion in the adjustments columns. An even simpler procedure would be to report the ending inventory balances in a similar manner but on the same lines used for beginning inventories; beginning balances would then be carried as debits to the manufacturing and the profit and loss columns, while ending balances would be entered directly as credits in the manufacturing columns and as debits in the balance sheet columns on the same lines. While the procedures described, as well as other similar procedures for recording adjustments directly in the statement columns, are acceptable, adjusting entries are still required in the journal and in the ledger to bring accounts up to date and to transfer profit and loss data to the appropriate summary account. Normally

## COMPANY — EXHIBIT A

SHEET

31, 1953

LIABILITIES AND CAPITAL		
Current liabilities:		
Notes payable	20,000	
Accounts payable	28,350	
Estimated income taxes payable	12,000	
Misc. sales, payroll, and withholding taxes payable	4,200	
Accrued salaries and wages	2,300	
Accrued interest on notes and bonds payable	1,600	
Dividends payable on preferred and common stock	3,150	
Total current liabilities		71,600
Long-term debt:		
6% First mortgage bonds, due Nov. 1, 1962		100,000
Deferred credits:		
Unearned interest on notes receivable		100
Total liabilities		171,700
CAPITAL		
Paid-in capital:		
Capital stock:		
6% Preferred stock, par \$100, 500 shares issued and outstanding	50,000	
Common stock, \$20 Par (7,500 shares issued)	150,000	
Less: Treasury stock (1,500 shares reacquired) . . .	30,000	
Common stock, 6,000 shares outstanding	120,000	
Paid-in surplus — premium on preferred stock	2,000	
Total paid-in capital . .	172,000	
Earned surplus	65,300	
Total capital		237,300
Total liabilities and capital		409,000

it is desirable to assemble all adjusting data and to summarize this data in informal journal form for subsequent formal restatement on the books. When such a procedure is followed, it may prove convenient to apply these adjusting entries to the working papers in exactly the same form that is to be followed in formally recognizing the adjustments in the journal and the ledger. This procedure was followed in the adjustments columns of the work sheet on pages 118 and 120 even though this involves more detail than a direct method of adjustment on the work sheet as suggested above.

It was indicated earlier that building expenses, expired insurance, and taxes are allocated 85% to manufacturing activities and 15% to general and administrative activities. The percentage used in the distribution of the charges resulted from an analysis of expenses during the course of the fiscal period. The building maintenance and repair account is shown on the trial balance at \$3,000. Of this amount, 85% or \$2,550 is entered in the manufacturing columns and 15% or \$450 is entered in the profit and loss columns. The charges for taxes, depreciation of buildings, and expired insurance are similarly distributed on the work sheet.

#### **PREPARATION OF ACCOUNTING STATEMENTS**

*Balance Sheet.* The balance sheet of the Martin Manufacturing Company, shown at the bottom of pages 122 and 123, is prepared from the balance sheet columns of the work sheet. A number of items reported in the balance sheet columns of the work sheet have been combined for purposes of balance sheet presentation. Such a procedure may be followed when items can be combined under some descriptive summary title and when amounts involved for the individual items are not material and hence are not considered to require separate disclosure. Items that have been combined on the statement include: accrued interest and dividends receivable; office supplies, prepaid insurance, and prepaid interest on notes payable; employees income taxes withheld, old-age benefit taxes, state unemployment taxes, federal unemployment taxes, and state sales taxes; accrued interest on notes and bonds payable; and dividends payable on preferred and common stock. Earned surplus as shown on the balance sheet is composed of earned surplus carried over from the trial balance columns plus net income after deduction for estimated income taxes as reported on the work sheet. The net income after income taxes is shown at the bottom of the work sheet as a balancing item for the profit and loss and the balance sheet columns. When extraordinary gains or losses are reported in the profit and loss columns, the balancing item after taxes may be designated "Net Increase in Earned Surplus for Period."

*Income Statement.* The amounts on the income statement are taken directly from the profit and loss columns in the work sheet. The statement is shown below :

**MARTIN MANUFACTURING COMPANY — EXHIBIT B**

INCOME STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Income from sales			
Gross sales		365,000	
Less Sales returns and allowances		5,000	
Net sales			360,000
Cost of goods sold			
Finished goods inventory, January 1, 1953		36,000	
Cost of goods manufactured (Schedule No 1)		252,755	
Total cost of finished goods available for sale		288,755	
Less Finished goods inventory, December 31, 1953		49,000	
Cost of goods sold			239,755
Gross profit			120,245
Operating expenses			
Selling expenses			
Sales salaries and commissions	24,400		
Advertising	8,100		
Miscellaneous selling expense	2,200		
Delivery salaries	9,200		
Depreciation of delivery equipment	1,600		
Miscellaneous delivery expense	2,100	47,600	
General and administrative expenses			
Officers salaries	16,000		
Office salaries	10,000		
Office supplies used	2,100		
Loss from bad debts	1,800		
Depr. of office furniture and fixtures	500		
Depreciation of buildings	255		
Expired insurance	360		
Building maintenance and repairs	450		
Taxes	2,460		
Miscellaneous general expense	2,300	36,225	
Total operating expenses			83,825
Net profit from operations			36,420
Other income and expenses			
Other income			
Purchases discount	2,180		
Interest income	800		
Dividend income	600	3,580	
Other expenses			
Sales discount	3,100		
Interest expense — bonds	6,000		
Interest expense — other	900	10,000	
Deduct excess of other expenses over other income			6,420
Net income before income taxes			30,000
Income taxes			12,000
Net income after income taxes			18,000

*Schedule of Cost of Goods Manufactured.* The schedule of cost of goods manufactured shows in detail the costs involved in completing goods during the period. The information shown on the schedule below is taken directly from the manufacturing columns of the work sheet.

**MARTIN MANUFACTURING COMPANY — SCHEDULE No. 1**  
**COST OF GOODS MANUFACTURED**  
**TO ACCOMPANY INCOME STATEMENT**  
**FOR YEAR ENDED DECEMBER 31, 1953**

Goods in process inventory, January 1, 1953 . . . . .		21,000
Raw materials:		
Raw materials inventory, January 1, 1953 . . . . .	17,000	
Raw materials purchases . . . . . 85,400		
Freight in . . . . . 4,700	90,100	
Less: Raw materials returns and allowances . . . . . 2,100	88,000	
Total cost of raw materials available for use . . . . .	105,000	
Less: Raw materials inventory, December 31, 1953 . . . . .	20,000	
Cost of raw materials transferred to process . . . . .	85,000	
Direct labor . . . . .	77,600	
Manufacturing expenses:		
Indirect labor . . . . . 22,900		
Factory superintendence . . . . . 20,000		
Building maintenance and repairs . . . . . 2,550		
Factory heat, light, and power . . . . . 20,480		
Taxes . . . . . 13,940		
Factory supplies used . . . . . 4,300		
Tools expense . . . . . 2,500		
Depr. of machinery and equipment . . . . . 3,200		
Depreciation of buildings . . . . . 1,445		
Patents expense . . . . . 500		
Expired insurance . . . . . 2,040		
Miscellaneous factory expense . . . . . 3,300	97,155	259,755
Total goods in process during period . . . . .		280,755
Less: Goods in process inventory, December 31, 1953 . . . . .		28,000
Cost of goods manufactured . . . . .		252,755

*Earned Surplus Statement.* The earned surplus statement shown in the illustration below summarizes the changes in earned surplus for the year:

**MARTIN MANUFACTURING COMPANY — EXHIBIT C**  
**EARNED SURPLUS STATEMENT**  
**FOR YEAR ENDED DECEMBER 31, 1953**

Balance of earned surplus, January 1, 1953 . . . . .		52,700
Add: Net income per income statement . . . . .		18,000
		70,700
Deduct: Dividends on preferred stock . . . . . 3,000		
Dividends on common stock . . . . . 2,400		5,400
Balance of earned surplus, December 31, 1953 . . . . .		65,300

**ADJUSTING AND  
CLOSING ACCOUNTS**

Upon completion of the work sheet and statements, the entries to bring the accounts up to date and to close the accounts are recorded in the journal. Before closing the accounts, any current, correcting, and adjusting entries are recorded. While such entries may first have been prepared in informal form in connection with the preparation of the work sheet, these are now entered formally in the journal. Closing entries may be conveniently prepared by using as a basis for the entries the balances as shown in the manufacturing and profit and loss columns of the work sheet. The following current entries are required for the Martin Manufacturing Company:

December 31		
(1) Dividends Receivable . . . . .	300	
Dividend Income . . . . .		300
To record announcement of \$1.50 dividend on 200 shares of Burton Co. common stock owned.		
31		
(2) Earned Surplus . . . . .	3,150	
Dividends Payable on Preferred Stock . . . . .		750
Dividends Payable on Common Stock . . . . .		2,400
To record declaration of dividends payable on January 10 to stock- holders of record December 26.		
Adjustments may now be recorded. These follow:		
31		
(3) Profit and Loss . . . . .	36,000	
Finished Goods Inventory . . . . .		36,000
To transfer beginning finished goods inventory to profit and loss.		
31		
(4) Manufacturing . . . . .	21,000	
Goods in Process Inventory . . . . .		21,000
To transfer the beginning goods in process inventory to manufacturing.		
31		
(5) Manufacturing . . . . .	17,000	
Raw Materials Inventory . . . . .		17,000
To transfer the beginning raw ma- terials inventory to manufacturing.		
31		
(6) Finished Goods Inventory . . . . .	49,000	
Profit and Loss . . . . .		49,000
To record ending finished goods in- ventory.		

	31		
(7) Goods in Process Inventory	. . .	28,000	
Manufacturing	. . .		28,000
To record ending goods in process inventory.			
	31		
(8) Raw Materials Inventory	. . . . .	20,000	
Manufacturing	. . . . .		20,000
To record ending raw materials inventory.			
	31		
(9) Factory Supplies Used	. . .	4,300	
Factory Supplies	. . .		4,300
To record cost of factory supplies used.			
	31		
(10) Office Supplies Used	. . .	2,100	
Office Supplies	. . . . .		2,100
To record cost of office supplies used.			
	31		
(11) Loss from Bad Debts	. . . . .	1,800	
Allowance for Bad Debts	. . . . .		1,800
To provide for estimated loss from bad debts.			
	31		
(12) Tools Expense	. . . . .	2,500	
Tools	. . . . .		2,500
To record tools expense for the year.			
	31		
(13) Depreciation of Delivery Equipment		1,600	
Allowance for Depreciation of Delivery Equipment			1,600
To record estimated depreciation of delivery equipment.			
	31		
(14) Depreciation of Office Furniture and Fixtures		500	
Allowance for Depreciation of Office Furniture and Fixtures	. . .		500
To record estimated depreciation of office furniture and fixtures.			
	31		
(15) Depreciation of Machinery and Equipment		3,200	
Allowance for Depreciation of Machinery and Equipment	. . . . .		3,200
To record estimated depreciation of machinery and equipment.			
	31		
(16) Depreciation of Buildings	. . . . .	1,700	
Allowance for Depreciation of Buildings	. . . . .		1,700
To record estimated depreciation of buildings.			

	31		
(17) Patents Expense		500	
Patents	....		500
To record amortization of patents.			
	31		
(18) Direct Labor		1,400	
Indirect Labor		300	
Sales Salaries and Commissions		400	
Delivery Salaries		200	
Accrued Salaries and Wages			2,300
To record accrued salaries and wages.			
	31		
(19) Interest Expense - Bonds		1,000	
Accrued Interest on Bonds Payable			1,000
To record accrued interest on bonds.			
	31		
(20) Interest Expense—Other		600	
Accrued Interest on Notes Payable			600
To record accrued interest on notes payable.			
	31		
(21) Expired Insurance	..	2,400	
Prepaid Insurance	...		2,400
To record expired insurance.			
	31		
(22) Prepaid Interest on Notes Payable	.	300	
Interest Expense	.		300
To record prepaid interest on notes payable.			
	31		
(23) Accrued Interest on Notes Receivable	.	200	
Interest Income	..		200
To record accrued interest on notes receivable.			
	31		
(24) Interest Income	.	100	
Unearned Interest on Notes Receivable			100
To record unearned interest on notes receivable.			

The adjusting entries are followed by those that close all of the nominal accounts. The closing entries are:

	31		
Manufacturing		262,755	
Raw Materials Returns and Allowances		2,100	
Raw Materials Purchases			85,400
Freight In			4,700
Direct Labor			77,600
Indirect Labor	..		22,900
Factory Superintendence	.		20,000
Building Maintenance and Repairs			2,550
Factory Heat, Light, and Power	.		20,480

Taxes	13,940
Factory Supplies Used	4,300
Tools Expense	2,500
Depreciation of Machinery and Equipment	3,200
Depreciation of Buildings	1,445
Patents Expense	500
Expired Insurance	2,040
Miscellaneous Factory Expense	3,300

To close manufacturing items into manufacturing.

31

Sales	365,000
Purchases Discounts	2,180
Interest Income	800
Dividend Income	600
Profit and Loss	368,580

To close income items into profit and loss

31

Profit and Loss	351,580
Manufacturing	252,755
Sales Returns and Allowances	5,000
Sales Salaries and Commissions	24,400
Advertising	8,100
Miscellaneous Selling Expense	2,200
Delivery Salaries	9,200
Depreciation of Delivery Equipment	1,600
Miscellaneous Delivery Expense	2,100
Officers Salaries	16,000
Office Salaries	10,000
Office Supplies Used	2,100
Loss from Bad Debts	1,800
Depreciation of Office Furniture and Fixtures	500
Depreciation of Buildings	255
Expired Insurance	360
Building Maintenance and Repairs	450
Taxes	2,460
Miscellaneous General Expense	2,300
Sales Discounts	3,100
Interest Expense—Bonds	6,000
Interest Expense—Other	900

To close expense items into profit and loss.

31

Profit and Loss	12,000
Estimated Income Taxes Payable	12,000

To record the estimated income taxes payable.

31

Profit and Loss	18,000
Earned Surplus	18,000

To transfer the balance in the profit and loss account after income taxes to the earned surplus account.

**PREPARATION OF  
POST-CLOSING TRIAL  
BALANCE**

After the adjusting and closing entries are posted, the post-closing trial balance, which appears below, is prepared to verify the equality of the debits and credits.

**MARTIN MANUFACTURING COMPANY****POST-CLOSING TRIAL BALANCE**

DECEMBER 31, 1953

Cash	41,910	
Petty Cash	200	
Notes Receivable	16,000	
Notes Receivable Discounted		10,000
Accounts Receivable	52,000	
Allowance for Bad Debts		2,410
Dividends Receivable	300	
Accrued Interest on Notes Receivable	200	
Finished Goods Inventory	49,000	
Goods in Process Inventory	28,000	
Raw Materials Inventory	20,000	
Factory Supplies	1,200	
Office Supplies	700	
Prepaid Insurance	2,600	
Prepaid Interest on Notes Payable	300	
Burton Co. Common Stock	24,300	
Tools	7,500	
Delivery Equipment	8,000	
Allowance for Depreciation of Delivery Equipment		5,200
Office Furniture and Fixtures	5,000	
Allowance for Depreciation of Office Furniture and Fixtures		2,100
Machinery and Equipment	64,000	
Allowance for Depreciation of Machinery and Equipment		12,500
Buildings	42,500	
Allowance for Depreciation of Buildings		8,500
Land	40,000	
Patents	6,000	
Goodwill	40,000	
Notes Payable		20,000
Accounts Payable		28,350
Employees Income Taxes Payable		2,200
Old-Age Benefit Taxes Payable		280
State Unemployment Taxes Payable		800
Federal Unemployment Taxes Payable		280
Sales Taxes Payable		640
Estimated Income Taxes Payable		12,000
Accrued Salaries and Wages		2,300
Accrued Interest on Bonds Payable		1,000
Accrued Interest on Notes Payable		600
Dividends Payable on Preferred Stock		750
Dividends Payable on Common Stock		2,400
6% First Mortgage Bonds		100,000
Unearned Interest on Notes Receivable		100
6% Preferred Stock		50,000
Common Stock		150,000
Treasury Stock — Common	30,000	
Earned Surplus		65,300
Premium on Preferred Stock		2,000
	<b>479,710</b>	<b>479,710</b>

**REVERSING THE ACCOUNTS**

The accrued and deferred balances established in adjusting the accounts may now be reversed. The reversing entries that would be made and posted follow:

January 1		
Accrued Salaries and Wages . . . . .	2,300	
Direct Labor . . . . .		1,400
Indirect Labor . . . . .		300
Sales Salaries and Commissions . . . . .		400
Delivery Salaries . . . . .		200
1		
Accrued Interest on Bonds Payable . . . . .	1,000	
Interest Expense—Bonds . . . . .		1,000
1		
Accrued Interest on Notes Payable . . . . .	600	
Interest Expense—Other . . . . .		600
1		
Interest Expense . . . . .	300	
Prepaid Interest on Notes Payable . . . . .		300
1		
Interest Income . . . . .	200	
Accrued Interest on Notes Receivable . . . . .		200
1		
Unearned Interest on Notes Receivable . . . . .	100	
Interest Income . . . . .		100

The post-closing trial balance is frequently prepared only after the reversing entries have been posted. When such practice is followed, a check is offered on the accuracy in posting reversing data.

**INTERIM STATEMENTS**

Statements are prepared at least once a year, and at that time the accounts in the ledger are adjusted and closed. Many business units, however, require statements during the fiscal year at one-month, three-month, or six-month intervals. When such interim statements are desired, they are prepared by means of a work sheet. The accounts in the ledger need not be adjusted and closed.

In preparing the work sheet, balances in the ledger are first listed in trial balance form. Because accounts have not been adjusted and closed since the close of the previous year, nominal accounts reflect balances to date. Adjustments are listed on the work sheet to bring the account balances up to date, and adjusted balances are carried to the appropriate statement columns. Accounting statements are then prepared from the work sheet data.

For example, in preparing the interim statements at the end of March, the adjusting data are reported on the working papers just as though the fiscal period were one quarter. Inventories and accrued

and deferred items as of March 31 are recorded. Amortization and depreciation are stated for a three-month period. The balance sheet prepared from the work sheet shows the financial position as of March 31; the income statement reports cumulative results for the three months ended March 31. To obtain an income statement covering operations for the month of March alone, it is necessary to subtract income and expense balances on the income statement for the two-month period ended February 28 from similar cumulative balances on the statement for the three-month period ended March 31. Inventory figures as of February 28 and March 31 are reported, and a statement showing the net income for the month of March is then available. By following the procedure just outlined, monthly statements, as well as cumulative income statements showing progress for the year to date, may be obtained.

### QUESTIONS

1. List the steps in the bookkeeping cycle. Why is each step necessary?
2. The Medwick Co. maintains a sales journal, a sales returns and allowances journal, a voucher register, a check register, and a general journal. For each account listed below indicate the possible sources of charges and credits:

Cash	Capital Stock
Marketable Securities	Earned Surplus
Accounts Receivable	Sales
Notes Receivable	Sales Returns and Allowances
Allowance for Bad Debts	Purchases
Merchandise Inventory	Freight In
Land and Buildings	Purchases Returns and Allowances
Allowance for Depreciation	Salaries
Notes Payable	Depreciation
Vouchers Payable	Purchases Discounts
Accrued Expenses	Sales Discounts

3. Describe the kind of work sheet that would be employed for:
  - (a) A trading concern.
  - (b) A manufacturing concern.
  - (c) A departmentalized business, the gross profit to be ascertained for each department.
  - (d) A manufacturing organization with departmentalized retail sales departments, a net operating profit to be determined for each department.
4. When would you recommend the preparation of working papers with a pair of columns reporting an adjusted trial balance?

5. Describe two methods that may be followed in adjusting the accounts for the ending inventories on the work sheet of a manufacturing company.

6. The bookkeeper for the Miller Co. in adjusting the accounts on the working papers charges or credits the beginning inventory to adjust it to the ending balance, with an offsetting credit or charge to an inventory variation balance. The inventory as adjusted is carried to the balance sheet column and the variation balance is carried to the appropriate profit and loss column. Appraise this procedure.

7. The bookkeeper for the Folsom Trading Co., after completing all adjustments except those for the merchandise inventories, makes the entry reported below to close the beginning inventory, to set up the ending inventory, to close all nominal accounts, and to report the net result of operations in the capital account.

Merchandise Inventory, December 31, 1953.....	18,000	
Sales.....	200,000	
Purchases Discounts.....	2,000	
Merchandise Inventory, January 1, 1953.....		20,000
Purchases.....		140,000
Selling Expenses.....		20,000
General and Administrative Expenses.....		15,000
Interest Expense.....		1,500
R. C. Folsom, Capital.....		23,500

(a) Appraise the foregoing procedure.

(b) What alternate procedure could be followed in adjusting and closing the accounts?

8. The Beverly Corporation prepares accounting statements and adjusts and closes the accounts at the end of each month. The Burke Corporation prepares accounting statements monthly, but adjusts and closes the accounts only at the end of each year.

(a) Will the reports of each company be the same?

(b) Can a cumulative "year-to-date" income statement be made available for the Beverly Corporation? How?

(c) Can income statements covering single months be made available for the Burke Corporation? How?

(d) Which procedure, monthly or annual closing, do you consider preferable? Why?

9. What is the effect upon the balance sheet and the income statement of each of the following errors:

(a) Accrued expenses are overstated at the end of the period.

(b) Deferred incomes are understated at the end of the period.

(c) Prepaid expenses are understated at the end of the period.

(d) Accrued incomes are overstated at the end of the period.

(e) The inventory is understated at the end of the period.

(f) Depreciation on an equipment item is overstated at the end of the period.

## EXERCISES

1. Give the account balances to be shown on an income statement for P. A. Jones for the month of June calculated from the following cumulative data:

	JANUARY 1 TO MAY 31	JANUARY 1 TO JUNE 30
Income from Sales:		
Sales.....	\$66,000	\$76,000
Sales Returns.....	1,500	1,800
Net Sales. ....	\$64,500	\$74,200
Cost of Goods Sold:		
Merchandise Inventory, January 1.....	\$14,000	\$14,000
Purchases.....	36,000	44,000
Merchandise Available for Sale.....	\$50,000	\$58,000
Merchandise Inventory at End of Period..	16,000	18,500
Cost of Goods Sold.....	\$34,000	\$39,500
Gross Profit.....	\$30,500	\$34,700
Operating Expenses:		
Selling Expenses.....	\$10,500	\$12,800
General and Administrative Expenses.....	6,800	8,200
Total Operating Expenses.....	\$17,300	\$21,000
Net Profit from Operations.....	\$13,200	\$13,700
Financial Management Income:		
Interest Income.....	350	400
Purchases Discounts.....	700	850
Gross Income.....	\$14,250	\$14,950
Financial Management Expense:		
Interest Expense.....	\$ 250	\$ 250
Sales Discounts.....	1,200	1,450
	\$ 1,450	\$ 1,700
Net Income.....	\$12,800	\$13,250
Gain from Sale of Investments.....		2,500
Increase in Capital.....	\$12,800	\$15,750

2. The following data are assembled for use in preparing a work sheet and accounting statements. Give the adjustments that are required on December 31 assuming that (1) accounts in the ledger are adjusted and closed monthly, and (2) accounts in the ledger are adjusted and closed only at the end of the year.

- (a) On September 1, \$600 was collected as subscription income for one year. A nominal account was credited for the income.
- (b) On October 1, insurance of \$180 was paid on a policy covering a 3-year period from this date. A real account was debited for the cost.
- (c) On February 1, \$40,000 was borrowed on a 3-year mortgage note, interest at 6% to be paid at quarterly intervals from this date.
- (d) On May 1, 4% bonds of \$5,000 were acquired, interest receivable semi-annually on April 1 and October 1.

3. Accounts of Super Products Co. at the end of the first year of operations show the following balances:

Cash . . . . .	\$13,200	
Land . . . . .	40,000	
Factory Buildings . . . . .	80,000	
Machinery . . . . .	50,000	
Investments . . . . .	20,000	
Accounts Payable . . . . .		\$ 30,000
Capital Stock . . . . .		200,000
Paid-in Surplus . . . . .		40,000
Sales . . . . .		300,000
Raw Materials Purchases . . . . .	140,000	
Direct Labor . . . . .	100,000	
Manufacturing Expenses . . . . .	75,500	
Operating Expenses . . . . .	52,000	
Income on Investments . . . . .		700
	\$570,700	\$570,700

At the end of the year physical inventories are: raw materials, \$40,000; goods in process, \$30,000; finished goods, \$30,000. Prepaid operating expenses are \$1,500 and accrued manufacturing expenses are \$500. Accrued income on investments is \$300. Depreciation for the year on buildings is \$2,000, apportioned \$1,500 to the factory and \$500 to general operations. Depreciation of machinery is \$2,500. The tax liability for the year is estimated at \$10,000.

Give the entries to adjust and close the books.

4. E. S. Barnett fails to adjust the accounts for the following items in closing the books on December 31, 1953. Assume that the omissions are never discovered but that the adjustments are properly made at the end of 1954. What effect does each omission have on the profits for 1953 and 1954?

- (a) Sales salaries accrued, \$30.
- (b) Prepaid advertising, \$200. Advertising Expense was debited for advertising payments.
- (c) Depreciation of office machine, \$100.
- (d) Accrued interest on notes receivable, \$20.
- (e) Office supplies inventory, \$100. Office Supplies, an asset account, was charged for purchases and has a balance of \$300.

5. Upon inspecting the books and records for the Melcombe Manufacturing Co. for the year ended December 31, 1953, you find the following data. What entries are required to bring the accounts up to date?

- (a) A receivable of \$150 from L. A. Case is determined to be uncollectible. The company maintains no allowance for such losses.
- (b) A creditor, the Williams Co., has just been awarded damages of \$2,200 as a result of breach of contract by Melcombe Mfg. Co. Nothing appears on the books in connection with this matter.
- (c) Furniture and fixtures, cost \$12,000, book value, \$1,800, had been sold for salvage of \$250, the salvage proceeds being credited to Miscellaneous Income.
- (d) Advances of \$1,500 to salesmen have been recorded as Sales Salaries.
- (e) Machinery at the end of the year shows a balance of \$24,500. It is discovered that additions to this account during the year totaled \$6,000, but of this amount \$2,500 should have been recorded as expense. Depreciation is to be recorded at 10% on machinery owned throughout the year; at one half this rate on machinery purchased during the year.

6. The Waring Sales Co. shows a credit balance in the profit and loss account of \$16,600 after the income and expense items have been transferred to this account at the end of a fiscal year. Give the remaining entries to close the books, assuming:

- (a) The business is a sole proprietorship; the owner, A. C. Waring, has made withdrawals of \$12,000 during the year and this is reported in a drawing account.
- (b) The business is a partnership; the owners, A. C. Waring and P. H. Waring, share profits 5:3; they have made withdrawals of \$15,000 and \$5,000 respectively and these amounts are reported in drawing accounts.
- (c) The business is a corporation; the ledger reports paid-in surplus, \$150,000, and earned surplus, \$15,000; dividends during the year of \$18,000 were charged to a dividends paid account.

7. A. L. James began operations in 1953 with cash of \$15,000. During the year his sales were \$50,000, \$36,000 being collected from customers during the year. Accounts receivable on December 31 are believed fully collectible. Purchases for the year were \$40,000, payments of \$27,500 being made on account. All sales were made at double the cost of the merchandise. The income statement reported a profit for 1953 of \$6,500. (a) Prepare a balance sheet as of December 31, 1953. (b) Submit a summary of cash in support of the balance reported on the balance sheet.

## PROBLEMS

5-1. The following cumulative income statements have been prepared for the Crandall Company in 1953:

	FIVE MONTHS ENDED MAY 31	SIX MONTHS ENDED JUNE 30	SEVEN MONTHS ENDED JULY 31
Income from sales:			
Sales .....	\$175,200	\$219,750	\$258,900
Sales returns and allowances .....	2,500	3,750	5,200
Net sales .....	\$172,700	\$216,000	\$253,700
Cost of goods sold:			
Inventory, January 1 .....	\$ 40,000	\$ 40,000	\$ 40,000
Purchases .....	117,000	153,000	185,000
Freight in .....	2,540	3,060	3,600
	\$159,540	\$196,060	\$228,600
Purchases returns .....			\$ 250
Merchandise available for sale .....	\$159,540	\$196,060	\$228,350
Inventory, end of period .....	28,000	34,000	44,350
Cost of goods sold .....	\$131,540	\$162,060	\$184,000
Gross profit on sales .....	\$ 41,160	\$ 53,940	\$ 69,700
Operating expenses:			
Selling expenses:			
Advertising .....	\$ 12,000	\$ 17,300	\$ 19,700
Sales salaries .....	15,000	20,000	24,750
Delivery expense .....	2,300	2,900	3,500
Sales contest bonuses .....		1,000	1,000
Depreciation of store equipment .....	2,000	2,500	3,100
Total selling expenses .....	\$ 31,300	\$ 43,700	\$ 52,050
General and administrative expenses:			
Depreciation of buildings .....	\$ 6,000	\$ 7,500	\$ 9,000
General and administrative salaries .....	7,700	9,500	11,000
Legal expense .....			2,000
Total general expenses .....	\$ 13,700	\$ 17,000	\$ 22,000
Total operating expenses .....	\$ 45,000	\$ 60,700	\$ 74,050
Net loss from operations .....	\$ 3,840	\$ 6,760	\$ 4,350
Other income:			
Interest income .....	\$ 440	\$ 525	\$ 700
	\$ 3,400	\$ 6,235	\$ 3,650
Other expense:			
Interest expense .....	\$ 320	\$ 735	\$ 940
Sales discount .....	2,200	2,650	3,100
Total other expense .....	\$ 2,520	\$ 3,385	\$ 4,040
Net loss .....	\$ 5,920	\$ 9,620	\$ 7,690

Instructions: (1) Prepare an income statement for the month of June.  
(2) Prepare an income statement for the month of July.

**5-2.** The data that follow are compiled from the books and records of the Ainsworth Company:

- (1) On October 1, 1953, \$1,500 was collected for one-year subscriptions beginning on that date. A balance sheet account was credited for the amount collected.
- (2) The Farmers State Bank deducted \$48 from a 60-day, non-interest-bearing note payable issued and dated November 10, 1953. An entry in a nominal account was made for the interest deducted in advance.
- (3) \$2,500 was borrowed from the bank on July 31, 1953, a 6-month note accruing interest at 6% being issued to the bank.
- (4) The company received a 60-day, non-interest-bearing note dated November 20, 1953, from a customer, and credited the customer's account for the face value of the note less \$72 for interest on the obligation. The interest was recorded in a nominal account.
- (5) On September 1, 1953, a real account was debited for \$108 for the premium on a 3-year fire insurance policy beginning on that date.
- (6) The company owns a \$5,000, 6% note dated October 31, 1953, and due on October 31, 1954.

The company follows the practice of reversing adjustments for all accrued items and deferred items originally entered in nominal accounts.

*Instructions:* (1) Give adjusting journal entries as of November 30, 1953, assuming that the books are adjusted and closed *monthly*.

(2) Give adjusting journal entries as of December 31, 1953, assuming that the books are adjusted and closed *monthly*.

(3) Give adjusting journal entries as of December 31, 1953, assuming that the books are adjusted and closed only at the end of each calendar year.

**5-3.** The following data are compiled from the books and records of the Chambers Company:

- (1) \$1,500 was borrowed from the bank on October 31, 1953. A note was issued, the principal sum and interest at 6%, becoming payable on October 31, 1954.
- (2) On August 1, 1953, a real account was debited for \$144 for the premium on a fire insurance policy covering a 3-year period from that date.
- (3) On September 1, 1953, \$750 was collected, representing rental income for one year beginning on that date. A balance sheet account was credited for the amount collected.
- (4) The company owns bonds of \$10,000 on which interest at 4% is paid semiannually on April 1 and October 1.
- (5) The First National Bank deducted \$24 from cash borrowed on a 60-day, non-interest-bearing note payable issued and dated November 8, 1953. An entry in a nominal account was made for the interest paid in advance.
- (6) The company received a 90-day, non-interest-bearing note dated October 23, 1953, from a customer and credited the customer's account for the face value of the note less \$45, representing a charge for interest on the obligation. The interest was recorded in a nominal account.

The company follows the practice of reversing adjustments for all accrued items and deferred items originally entered in nominal accounts.

*Instructions:* (1) Give adjusting entries as of November 30, 1953, assuming that the books are adjusted and closed *monthly*.

(2) Give adjusting journal entries as of December 31, 1953, assuming the books are adjusted and closed *monthly*.

(3) Give adjusting journal entries as of December 31, 1953, assuming that the books are adjusted and closed only at the end of each calendar year.

**5-4.** The account balances taken from the ledger of P. R. Carter on January 31, 1953, are given below:

Cash.....	\$ 1,020	Withholding Taxes Payable \$	160
Notes Receivable.....	1,500	Sales Tax Payable.....	515
Notes Rec. Discounted.....	1,200	P. R. Carter, Capital.....	8,300
Accounts Receivable.....	3,840	P. R. Carter, Drawing.....	400
Allowance for Bad Debts....	50	Sales.....	27,760
Merchandise Inventory,		Sales Discounts.....	125
January 1, 1953.....	6,500	Purchases.....	19,000
Office Equipment.....	1,600	Purchases Discounts.....	165
Allowance for Depreciation		Freight In.....	340
of Office Equipment.....	660	Advertising Expense.....	110
Store Equipment.....	3,600	Delivery Expense.....	230
Allowance for Depreciation		Sales Salaries.....	1,800
of Store Equipment.....	1,350	Office Expense.....	2,000
Unexpired Insurance.....	80	Rent.....	360
Notes Payable.....	1,200	Taxes, Payroll and Other...	285
Accounts Payable.....	980	Interest Income.....	30
Accrued Property and Pay-		Interest Expense.....	20
roll Taxes.....	440		

Data for adjustments for the month ended January 31, 1953, follow:

- The allowance for bad debts account is to be increased to \$150.
- Depreciation of office equipment is  $7\frac{1}{2}\%$  a year.
- Depreciation of store equipment is  $10\%$  a year.
- Insurance to be deferred is \$45.
- Accrued taxes covering property and payrolls is to be increased to \$490.
- Unpaid bills for advertising total \$40.
- Sales salaries owed are \$250.
- Office supplies on hand total \$400.
- Of the \$30 reported as interest income, \$10 is unearned.
- Interest of \$15 has accrued on notes receivable.
- Interest of \$30 has accrued on notes payable.
- Of the \$20 reported as interest expense, \$5 represents a prepayment for the month of February.
- The merchandise inventory on January 31, 1953, is \$2,250.

*Instructions:* (1) Prepare an eight-column work sheet.

(2) Prepare an income statement and a balance sheet. (Discounts are subtracted from sales and purchases to which they relate on the income statement.)

(3) Assuming that adjusting entries have been prepared as reported on the work sheet, give in compound form only those entries required to close the books on January 31.

(4) List the letters for those adjustments that should be reversed as of February 1.

**5-5.** The account balances taken from the ledger of A. M. Richards and T. K. Scott at the end of the first year's operations on December 31, 1953, and the data for adjustments are given below:

Cash.....	\$ 2,250	T. K. Scott, Personal (dr.) ..	\$ 900
Notes Receivable.....	3,600	Sales.....	64,850
Notes Receivable		Purchases.....	67,000
Discounted.....	2,000	Purchases Returns and Al-	
Accounts Receivable.....	2,500	lowances.....	1,650
Store Furniture.....	3,700	Sales Salaries.....	8,000
Store Supplies.....	600	Taxes.....	600
Notes Payable.....	6,000	Miscellaneous General Ex-	
Accounts Payable.....	12,600	pense.....	12,600
A. M. Richards, Capital....	10,000	Purchases Discounts.....	2,300
T. K. Scott, Capital.....	5,100	Interest Income.....	150
A. M. Richards, Personal		Interest Expense.....	500
(dr.).....	2,400		

Data for adjustments, year ended December 31, 1953:

- Inventories: merchandise, \$23,600; store supplies, \$280.
- Depreciation of store furniture, 10% a year. Additions to store furniture were made on March 1 costing \$900.
- Accrued advertising, \$65.
- Taxes paid in advance, \$100.
- Accrued taxes, \$215.
- Deferred interest on notes payable, \$60.
- Accrued interest on notes payable, \$30.
- Accrued interest on notes receivable, \$35.
- Unearned interest income, \$45.
- 5% of the accounts receivable are expected to prove uncollectible.
- Richards and Scott divide profits and losses in the ratio 3:2.

*Instructions:* (1) Prepare an eight-column work sheet.

(2) Prepare an income statement, a statement of changes in partners' capital accounts, and a balance sheet.

(3) Prepare the required adjusting, closing, and reversing entries.

**5-6.** The following account balances are taken from the books of the James Manufacturing Co. on December 31, 1953, the end of the first year of operations:

Cash.....	\$34,500	Indirect Labor.....	\$23,000
Accounts Receivable.....	92,800	Heat, Light, Power.....	9,000
Factory Supplies.....	1,200	Maintenance and Repairs...	5,000
Office Supplies.....	700	Miscellaneous Factory	
Plant and Equipment.....	205,000	Expense.....	6,000
Accounts Payable.....	73,700	Sales Salaries and Commis-	
4½% Bonds Payable.....	150,000	sions.....	24,000
Capital Stock (par \$20)...	100,000	Advertising.....	15,000
Sales.....	470,000	Miscellaneous Selling Ex-	
Sales of Raw Materials (at		pense.....	20,000
cost).....	26,100	Office Salaries.....	17,000
Raw Materials Purchases...	247,100	Miscellaneous General and	
Freight In.....	7,000	Administrative Expense...	4,125
Direct Labor.....	105,000	Interest Expense — Bonds..	3,375

The following adjustments are to be made on December 31:

(a) Inventories:

Finished Goods, \$18,000  
 Goods in Process, \$14,000  
 Raw Materials, \$20,000  
 Factory Supplies, \$500  
 Office Supplies, \$250

(b) Provision for loss from bad debts, 1% of sales of finished product.

(c) Depreciation, 8%, chargeable  $\frac{3}{4}$  to manufacturing,  $\frac{1}{8}$  to selling,  $\frac{1}{8}$  to office.

(d) Accrued Salaries and Wages:

Direct Labor . . . . .	\$2,200	
Indirect Labor . . . . .	500	
Sales Salaries . . . . .	300	\$3,000

(e) A dividend of \$1 per share had been declared December 28 and is payable January 10, 1954.

(f) Bond interest payment dates are March 1 and September 1.

(g) Provision of \$10,000 is to be made for the federal income taxes for 1953.

*Instructions:* (1) Prepare a ten-column work sheet.

(2) Prepare a balance sheet, an income statement and a cost of goods manufactured schedule, and a surplus statement.

(3) Prepare the necessary adjusting, closing, and reversing entries.

**5-7.** The following account balances are taken from the general ledger of the Marshall Manufacturing Co. on December 31, 1953, the end of a fiscal year. The corporation was organized January 2, 1947.

Cash on Hand and in Banks	\$19,500	Allowance for Depreciation	
Notes Receivable . . . . .	18,500	of Office Furniture and	
Accounts Receivable . . . . .	56,000	Fixtures . . . . .	\$ 9,000
Allowance for Doubtful Ac-		Machinery and Equipment .	160,000
counts . . . . .	650	Allowance for Depreciation	
Finished Goods Inventory		of Machinery and Equip-	
January 1, 1953 . . . . .	40,500	ment . . . . .	30,000
Goods in Process Inventory,		Buildings . . . . .	125,000
January 1, 1953 . . . . .	42,000	Allowance for Depreciation	
Raw Materials Inventory,		of Buildings . . . . .	18,000
January 1, 1953 . . . . .	24,000	Land . . . . .	20,000
Shipping Supplies . . . . .	8,500	Patents . . . . .	27,500
Office Supplies . . . . .	6,200	Notes Payable . . . . .	23,000
Factory Supplies . . . . .	12,500	Accounts Payable . . . . .	45,700
Tools . . . . .	10,000	4½% First Mortgage Bonds .	100,000
Patterns and Dies . . . . .	20,000	6% Preferred Stock (Par	
Shipping Department Equip-		\$100) . . . . .	100,000
ment . . . . .	12,000	Common Stock (Par \$100)	100,000
Allowance for Depreciation		Premium on Common Stock	10,000
of Shipping Equipment . .	7,200	Earned Surplus . . . . .	105,875
Office Furniture and Fix-		Sales . . . . .	520,000
tures . . . . .	15,000		

Sales Returns and Allowances.....	\$ 10,000	Sales Commissions.....	\$12,300
Raw Materials Purchases....	110,200	Traveling Expense.....	8,500
Freight and Cartage In . . .	8,800	Advertising Expense.....	24,000
Purchase Returns and Allowances. . . . .	3,000	Shipping Department Salaries.....	6,000
Direct Labor. . . . .	103,700	Sundry Shipping Department Expenses.....	1,000
Indirect Labor.....	24,000	Officers Salaries . . . . .	30,000
Plant Superintendence.....	20,000	Office Salaries.....	14,000
Maintenance and Repairs of Buildings . . . . .	6,300	Insurance.....	8,500
Maintenance and Repairs of Machinery . . . . .	4,500	Postage, Telephone and Telegraph.....	1,400
Heat, Light, and Power (Factory).....	11,000	Sundry Office Expense . . .	1,500
Taxes. . . . .	10,200	Purchases Discounts.....	3,400
Sundry Factory Expense... ..	3,600	Interest Income . . . . .	800
Sales Salaries.....	30,000	Sales Discounts . . . . .	6,500
		Interest Expense Bonds... ..	2,625
		Interest Expense Other... ..	800

The following adjustments are to be made on December 31, 1953, before the books are closed:

(a) Inventories:

Finished Goods, \$49,500; Goods in Process, \$55,200; Raw Materials, \$36,600; Shipping Supplies, \$1,800; Office Supplies, \$1,000; Factory Supplies, \$2,700.

(b) Depreciation and Amortization:

Shipping department equipment,  $12\frac{1}{2}\%$ .

Office furniture and fixtures,  $10\%$ .

Machinery and equipment,  $5\%$ . New machinery and equipment costing \$60,000 was installed on March 1, 1953.

(Buildings,  $4\%$ . Additions to the buildings costing \$50,000 were completed June 30, 1953.

Patents were acquired January 2, 1947. They are being reduced by  $\frac{1}{17}$  of cost each year.

Patterns and dies are reduced by  $15\%$  of the balance in the account.

Tools are reduced by  $20\%$  of the balance in the account.

(c) The allowance for doubtful accounts is to be increased by  $\frac{1}{2}\%$  of net sales.

(d) Accrued Expenses:

Salaries and wages: direct labor, \$1,400; indirect labor, \$300; sales salaries, \$400; shipping department salaries, \$100.

Interest on bonds is payable semiannually on February 1 and August 1.

Interest on notes payable, \$50.

Property taxes, \$2,000.

(e) Deferred Expenses:

Insurance, \$2,500.

Interest on notes payable, \$100.

- (f) **Accrued Income:** Interest on notes receivable, \$200.
- (g) The following information is also to be recorded:
- (1) It is discovered that sales commissions of \$1,200 were charged in error to the account Shipping Department Salaries.
  - (2) On December 30 the board of directors declared a quarterly dividend on preferred stock and a dividend of \$1.50 on common stock, payable January 25, 1954, to stockholders of record Jan. 15, 1954.
  - (3) Provision is to be made for income taxes for 1953 at 40% of net income.

Taxes, expired insurance, and building expenses are to be distributed as follows: to manufacturing operations, 70%; to selling operations, 20%; to general operations, 10%.

The only changes in earned surplus during the year were the charges for the regular quarterly dividends on preferred stock. The balance of Earned Surplus on January 1, 1953, was \$110,375.

*Instructions:* (1) Prepare a ten-column work sheet. There should be a pair of columns for trial balance, adjustments, manufacturing, profit and loss, and balance sheet.

(2) Prepare (a) a balance sheet, (b) an income statement supported by schedules showing the cost of goods manufactured, selling expenses, and general and administrative expenses, and (c) an earned surplus statement.

(3) Draft all of the journal entries necessary to give effect to the foregoing information and to adjust and close the books of the corporation.

(4) Draft the necessary reversing entries as of January 1, 1954.

**5-8.** The Bronson Trading Co. maintains two sales departments, Department A and Department B. A factory division of this company manufactures merchandise that is sold only in Department A. Below is given a complete list of the account balances taken from the company's general ledger on December 31, 1953, the end of a fiscal year.

Cash.....	\$18,750	Allowance for Depreciation	
Notes Receivable.....	11,400	of Store Building.....	\$ 2,800
Notes Receivable Dis-		Factory Building.....	40,000
counted.....	2,500	Allowance for Depreciation	
Accounts Receivable.....	33,300	of Factory Building.....	4,900
Allowance for Bad Debts...	450	Store Fixtures.....	10,000
Merchandise Inventory,		Allowance for Depreciation	
Dept. A.....	14,800	of Store Fixtures.....	4,200
Merchandise Inventory,		Machinery and Equipment..	50,000
Dept. B.....	12,200	Allowance for Depreciation	
Finished Goods Inventory..	5,400	of Machinery and Equip-	
Goods in Process Inventory.	11,800	ment.....	14,000
Raw Materials Inventory...	10,000	Land.....	40,000
Store Supplies, Dept. A....	2,100	Tools.....	8,500
Store Supplies, Dept. B....	1,800	Patterns and Dies.....	6,000
Factory Supplies.....	4,100	Goodwill.....	20,000
Unexpired Insurance.....	7,000	Notes Payable.....	6,000
Store Building.....	20,000	Accounts Payable.....	23,000
		6% First Mortgage Bonds..	50,000
		Common Stock (\$100 par)..	100,000

Treasury Stock (Common, 150 shares).....	\$ 15,000	Factory Maintenance and Repairs.....	\$ 1,500
7% Cumulative Preferred Stock (\$100 par).....	50,000	Factory Heat, Light, Power	14,000
Earned Surplus.....	26,205	Taxes.....	7,200
Sales, Department A.....	262,400	Miscellaneous Factory Expense.....	2,100
Sales, Department B.....	101,000	Sales Salaries, Dept. A.....	13,000
Sales Returns and Allow- ances Department A.....	5,400	Sales Salaries, Dept. B.....	6,500
Sales Returns and Allow- ances, Department B.....	2,000	Advertising.....	8,400
Merchandise Purchases, Dept. A.....	24,000	Miscellaneous Store Ex- pense.....	1,500
Merchandise Purchases, Dept. B.....	66,000	Officers Salaries.....	17,400
Freight in — Mdse. Pur- chases.....	3,000	Postage, Telephone, and Telegraph.....	300
Raw Materials Purchases...	41,400	Miscellaneous Office Ex- pense.....	1,800
Direct Labor.....	50,400	Interest Income.....	545
Indirect Labor.....	26,900	Purchases Discounts.....	2,000
Factory Superintendence...	12,000	Interest Expense — Bonds	2,000
		Interest Expense — Other..	1,050

The following information is to be considered in adjusting and closing the books on December 31, 1953:

(a) Inventories:

Mdse. Inventory, Dept. A.....	\$15,800	Raw Materials Inven- tory.....	\$8,600
Mdse. Inventory, Dept. B.....	11,500	Store Supplies Inventory, Dept. A.....	430
Finished Goods In- ventory.....	7,600	Store Supplies Inventory, Dept. B.....	275
Goods in Process Inventory.....	12,000	Factory Supplies.....	875

(b) Depreciation and Amortization:

Store and factory buildings, 4%. An extension to the factory building, costing \$5,000, was completed October 1, 1953.

Store fixtures, 20%.

Machinery and equipment, 10%.

Tools of \$3,000 are to be written off to expense.

Patterns and dies of \$2,100 are to be written off to expense.

(c) Bad Debts:

Each department is to be charged with  $\frac{1}{2}$  of 1% of its net sales, and the allowance for bad debts is to be credited for this total.

(d) Accrued Expenses:

Advertising, \$1,500.

Wages and Salaries:

Direct Labor.....	\$800	Sales Salaries, Dept. A.....	\$250
Indirect Labor.....	450	Sales Salaries, Dept. B.....	200

Interest: Interest on the first mortgage bonds is payable semiannually on March 1 and September 1.

## (e) Prepaid Expenses:

Insurance prepaid on December 31, \$4,200.

Taxes prepaid on December 31, \$650.

Interest prepaid on notes payable, \$150.

## (f) Accrued Income:

Accrued interest on notes receivable, \$85.

## (g) The following information is also to be recorded:

(1) In December the board of directors declared a regular quarterly dividend on preferred stock and a \$6 dividend on common stock, dividends payable January 20, 1954. It was also decided to write off goodwill against Earned Surplus at the end of the year.

(2) Provision is to be made for income taxes for 1953 at 40% of the net income.

## (h) Expenses are to be distributed to departments as indicated below:

	<u>Factory</u>	<u>Dept. A</u>	<u>Dept. B</u>
Taxes and expired insurance	50%	30%	20%
Selling and general expenses that cannot be identified with departments		70%	30%
Freight in on merchandise purchases is chargeable to departments on basis of purchases.			

*Instructions:* (1) Prepare a 14-column work sheet with columns as follows:

Two columns for trial balance.

Two columns for adjustments.

Two columns in which will be summarized the cost of goods manufactured and transferred to Dept. A (finished goods remain in the factory until requisitioned by Dept. A).

Two columns for income and expense of Department A.

Two columns for income and expense of Department B.

Two columns for nondepartmental income and expense (interest and discount items). Departmental profits and losses are carried to this pair of columns so that a balance may be determined here that shows the profit and loss for operations as a whole.

Two columns for balance sheet items.

(2) Prepare (a) a balance sheet; (b) an income statement showing results of operations for Department A, Department B, and for the business as a whole; (c) a schedule supporting the income statement to show the cost of goods manufactured and transferred to Department A; and (d) an earned surplus statement (assume that surplus was affected only by regular quarterly preferred dividends in 1953 prior to December 31).

(3) Draft all of the journal entries necessary to give effect to the foregoing information and to close the books.

(4) Draft the necessary reversing entries as of January 1, 1954.

# *Cash and Temporary Investments*

### **IMPORTANCE OF WORKING CAPITAL**

The nature of working capital and the importance that attaches to a satisfactory working capital position have already been mentioned. A business cannot survive in the absence of a favorable ratio between current assets and current liabilities. Furthermore, its ability to prosper will be largely determined by the composition of the current asset pool. There must be a healthy balance between liquid capital, in the form of cash and marketable securities, and receivables and inventories. Activities of the business center about these items. Cash and marketable securities, representing purchasing power immediately available, are used to meet current claims and purchasing, payroll, and expense requirements; receivables are the outgrowth of sales effort and are a source for cash in the course of operations; merchandise is the means of achieving a profit. Management in setting policies with respect to general operations, purchasing, financing, expansion, and dividends must work within the limitations set by the company's working capital position. This and the succeeding five chapters direct attention to the current asset and current liability items and the problems of income measurement related thereto.

### **NATURE OF CASH**

Cash is perhaps the most active item on the accounting statements. The movement of cash completes almost all purchases and sales transactions. Purchases of goods or services normally result in cash payments; sales normally result in cash receipts. Cash, more often than any other asset, is the item involved in business transactions. This is due to the nature of the business transactions, which include a price and conditions calling for settlement in terms of the medium of exchange.

In striking contrast with the activity of cash is its unproductive nature. Since cash is the measure of value, it cannot expand or grow unless it is exchanged. Large balances of cash on hand are often referred to as "idle cash." To be most useful to a business enterprise, cash must be kept moving.

**COMPOSITION OF CASH**

*Cash should represent only those amounts freely available for general disbursement purposes.* Cash should include amounts in banks and elsewhere available upon demand and those money items on hand that can be used as a medium of exchange or that are acceptable for deposit by a bank at face value. Cash on hand should include petty cash funds, change funds, and other regularly used and unexpended cash funds, together with other cash items on hand consisting of coins and currency, personal checks, cashiers' checks, bank drafts, and money orders.

"Acceptance at face value on deposit" is a satisfactory test in classifying as cash the items that may be found in the cash drawer. It is assumed that deposits are made regularly, and such deposits become a basis for disbursements by the debtor. Although postage stamps may in some instances pass for mail payments of small amounts, they are not accepted for deposit and should be classified as office supplies rather than as cash. Post-dated checks are accounts receivable until the time when they can be deposited. Cash-due memorandums for money advanced to officers and employees represent receivables, in some instances less satisfactory receivables than those of trade customers. Paper left at a bank for collection represents a receivable until collection is made and the amount is added to the depositor's account. Stocks, bonds, and United States securities, although immediately convertible into cash, do not constitute cash and should be reported under appropriately descriptive titles.

Certain cash items may be specifically designated for certain purposes. Such items call for separate reporting. Those balances that are to be applied to some current purpose or current obligation are, however, properly included in the current section on the balance sheet. For example, cash funds for employees' travel, for payment of current interest and dividends, or for payment of obligations for plant items included in the current liabilities may be separately reported but are still classified as current.

Cash items not freely available for current disbursements require separate designation and classification under a noncurrent heading on the balance sheet. The noncurrent classification applies to such items as time deposits not currently available as a result of special withdrawal restrictions; cash in foreign banks blocked or otherwise restricted as to withdrawals; cash deposits on bids or options that may be applied to the acquisition of noncurrent assets; cash funds and cash held by trustees for plant acquisitions, bond retirement, and pension payments; and balances in closed banks.

**CONTROL OF CASH**

Cash is both active and liquid. Control of cash movements is necessary to prevent losses. While no system guarantees complete control of cash, the spreading of cash functions among several employees tends to insure its safe handling and accurate reporting. This division of work among several people is known as *internal check*.

A satisfactory system of internal check affords safeguards against practices resulting in the misappropriation of funds. When persons have access to cash and also to the business records, the business becomes vulnerable to a great number of fraudulent practices. The following are only a few of the practices that have been found under such conditions: (1) Cash from sales, from recoveries of accounts previously written off, and from other income sources is not recorded, such cash being pocketed. (2) Receivables are not entered on the books, and cash collected on such receivables is withheld. (3) A part of a customer's remittance may be misappropriated, Sales Discounts or Sales Returns and Allowances being charged for the cash withdrawn for personal use. (4) Bad Debts or Allowance for Bad Debts is charged and the customer's account is credited when payment is received, and the proceeds are withheld. (5) Vouchers once paid for are used in support of further reimbursements. (6) Checks for personal purposes are charged to business expense. (7) Invoices, vouchers, receipts, or payroll records are supplied in support of fictitious charges, and checks issued in payment of such charges are subsequently forged. (8) Purchases discounts or purchases returns and allowances are omitted or understated, Cash being credited for an excessive amount and cash equal to the fictitious charge misappropriated.

Two additional practices, "check kiting" and "lapping," are found where those who handle cash also maintain the cash record.

"Check kiting" occurs when a check is drawn upon one bank account and is deposited in another bank account at the end of the month. The deposit is recorded by the second bank in the current month, but the check is not cleared so that the withdrawal is not recorded by the first bank. No entry is made in the books of account for the check. When the bank statements are received, the balance shown in the bank on which the check was drawn is unchanged because the check has not yet been presented to that bank for payment. At the same time the balance in the bank in which the check was deposited is increased. In this way a cash shortage may be concealed for the time being.

"Lapping" is a practice accomplished by postponing credits to customers' accounts for cash received to apply on accounts. For ex-

ample, in successive days, cash is received from customers A, B, and C in amounts of \$75, \$125, and \$120. A's payment is withheld. A is subsequently credited with \$75 out of B's payment and the difference, \$50, is taken. B is credited for \$125 upon C's \$120 payment and return of \$5 on the amount originally "borrowed." The shortage at this point is \$120, the unrecorded credit to C's account. This procedure can be continued with but slight delay in recording any customer's payment. The embezzler usually means to return the money and avoid the strain of "lapping" after he has made a "profit on his investments."

A system of internal check or control over cash funds should operate to disclose cash discrepancies as well as to fix responsibility for any possible misappropriations or mistakes in handling and recording cash. Where misuse of funds or errors are indicated, it is only fair to members of an organization that the causes be determined and the responsibility be fixed so that innocent parties may be spared any embarrassment.

The system of internal check must, of course, be adapted to the business that it is to serve. It is not feasible to attempt to describe all of the features and techniques that might be employed in businesses of various kinds and sizes. In general, however, systems of internal control deny access to the records to those who handle cash. This reduces the possibility of improper entries to conceal the misuse of cash receipts and cash payments. The misappropriation of cash is greatly reduced if two or more employees must conspire in the embezzlement. Further, the system normally provides for separation of the receiving and paying functions. The basic characteristics of a system of internal check are listed and described below:

- (1) Separation of handling and recording cash receipts.
- (2) Daily deposit of all cash received.
- (3) Internal audit at irregular intervals.
- (4) Voucher system to control cash payments.

Normally an adequate system would require that sales receipts and cash remittances from customers be made available directly to the treasurer or the cashier for deposit, while records supporting such transactions as well as records supporting bank deposits be made available directly to the bookkeeping division. Frequently, for example, a clerk opens the mail, prepares lists of remittances in duplicate, and then sends the cash and one copy of the list of remittances to the cashier and the second copy of the list to the bookkeeping division. Entries in the books of original entry and postings to customers' accounts are made directly from this list. Readings of cash registers are made by some responsible party other than the cashier at the end of the day, and a summary of receipts is provided the bookkeeping

division by this party for use in recording receipts. While deposits to the bank are made by the cashier or the treasurer, entries in the books are made from lists of remittances and register readings prepared by independent parties. If customers' remittances are not listed and the cash is misused, statements to customers will report excessive amounts and protests will lead to sources of the discrepancies; if cash receipts listed are not deposited properly, the bank record will not agree with cash records.

The daily deposit of all cash received prevents sums of cash from lying around the office and being used for other than business purposes. Officers and employees have less opportunity to borrow on I.O.U.'s. The bank now protects company funds and releases these only upon proper company authorization. When cash is deposited daily, the bank's record of deposits is compared and must agree with the depositor's record of cash receipts. This double record of cash provides an automatic check over cash receipts of the business.

A system of internal audit at irregular and unannounced intervals may be made a part of the system of internal check. A member of the auditing department verifies the records and checks upon the activities of those employees handling cash to make sure that the provisions of the system are being carried out. Such control is particularly desirable over petty cash and other cash funds where cash handling and bookkeeping are generally combined.

The use of the voucher system to control cash payments is a desirable feature of cash control. Vouchers authorizing disbursements of cash by check are made at the time goods or services are received and found acceptable. Entries in the voucher register recording the expenditure and the authorization for payment are accomplished by the bookkeeping division. Checks are also prepared here and are sent, together with the documents supporting the disbursements, to the person authorized to make payment. This party signs and issues checks only after careful inspection of the vouchers supporting and authorizing payments. The bookkeeping department, upon notification of the issuance of checks, makes appropriate records of this fact. Receiving and paying functions of the business are maintained as two separate systems. In each instance cash and recording activities are exercised by different parties, with misappropriation of funds impossible without the collusion of two or more parties. The voucher system offers control over cash disbursements. It also provides for the immediate recognition of every liability incurred. Vouchers filed according to discount date or due date serve to provide financial officers with significant data concerning future demands upon cash.

**DOUBLE RECORD  
OF CASH**

The preceding section listed the daily deposit of all cash received as an important factor in the control of cash. If all cash receipts are deposited daily, then the bank record of deposits follows the depositor's record of cash receipts. As a complementary device, all cash payments should be made by check, the bank then maintaining a record for checks that follows the depositor's record of cash payments. Two complete cash summaries are thus available, one in the cashbook and the other on the bank statement. In addition to the advantages resulting from organized and consistent routines applied to cash receipts and disbursements, a duplicate record of cash maintained by an outside agency has been made available as a check upon the accuracy of the company records.

Maintenance of the double record of cash involves two special business and accounting procedures described in the following sections: (1) the adoption of a system of cash disbursements from a petty cash fund, and (2) reconciliation of the bank balance with the cash balance at regular intervals.

**IMPREST SYSTEM OF  
CASH FUNDS**

Immediate cash payments and payments that are too small to be made by check may be made from a petty cash fund. Under the *imprest system* the petty cash fund is created by drawing a check payable to petty cash for the amount of the fund to be established. The cash is then turned over to a cashier or some person who is to be responsible for payments made out of the fund. The cashier generally requires a signed receipt for all payments made. A record of these payments may be kept in a *petty cash journal*. Whenever the amount of cash remaining in the fund runs low and at the end of each fiscal period, the fund is replenished by writing a check payable to petty cash equal to the payments that have been made from the fund. Replenishment is necessary whenever statements are to be prepared, since petty cash is reported on the balance sheet at the original balance and operating accounts should reflect all petty cash disbursements.

The request for cash to replenish the fund is supported by a summary and analysis of the signed receipts that were required at the time of the payments from the fund. This analysis is the basis for charges to the proper accounts for the amount of the replenishing check. The signed receipts are then filed as evidence supporting these entries.

The cashier of the petty cash fund is held accountable for the total amount of the fund in his care. He must have on hand at all times cash and signed receipts equal in amount to the original balance of the fund. Inasmuch as the cashier normally keeps the petty cash records,

the rule of separating the recording and handling of cash is not here enforced. Such practice is considered permissible in this case, however, since the amounts involved are relatively small and the entire proceedings are subject to internal audit.

To illustrate the accounting procedures involved in the use of a petty cash fund, assume that on May 1, Martin Motors, Inc. sets up a petty cash fund of \$100; on May 23, the fund is replenished by \$92.47; on May 31, the end of the period, the fund is replenished by \$35.18. The following entries are required in recording the establishment and the replenishment of the fund:

May 1	Petty Cash Fund . . . . .	100.00	
	Cash . . . . .		100.00
	To set up a petty cash fund.		
May 23	Various Expense, Asset, or Other Accounts	92 47	
	Cash . . . . .		92 47
	To replenish the petty cash fund for disbursements, May 1 23, as shown by receipts 1 73.		
May 31	Various Expense, Asset, or Other Accounts	35 18	
	Cash . . . . .		35 18
	To replenish the petty cash fund at the end of the month for disbursements, May 24 31, as shown by receipts 74-93.		

If the business uses the voucher system, establishing and replenishing the fund requires the preparation of vouchers and entries in the voucher register. Charges in the voucher register are made to the accounts indicated above, but credits are made to Accounts Payable. When checks are issued, they are recorded as charges to Accounts Payable and credits to Cash. The net effect in the accounts is exactly the same as illustrated above.

Methods other than the imprest system are sometimes employed in handling petty cash. These may provide for checks of fixed amounts to be given to the petty cashier upon his request. Replenishing checks would not have to agree with the disbursements. Records of petty cash payments here may be used as books of original entry for posting purposes. Expenses are charged and Petty Cash is credited for cash disbursements. Petty Cash is debited and Cash is credited for cash transfers to petty cash. Such procedures are sometimes called the *fluctuating fund method* to distinguish them from the imprest system that provides for a nonfluctuating fund.

The imprest system may be employed not only for petty cash but also for other funds in a large organization. For example, a branch

office or agency may be allowed a fund that is subsequently replenished for amounts equal to disbursements out of the fund. Evidence concerning payments out of the fund is submitted with the request for replenishment, and fund disbursements are recorded on the books at the time of fund replenishment.

**RECONCILIATION OF BANK BALANCES**

When daily receipts are deposited and payments other than those from petty cash are made by check, the bank's account of its transactions with the depositor provides a record that may be compared with the record of cash on the depositor's books. This comparison is usually made monthly when a statement is received from the bank. When the balance on the bank statement is not identical with that reported on the depositor's books, a summary known as a *bank reconciliation statement* is prepared that offers the reasons for any discrepancy.

An understanding of the reciprocal relationship existing between the records of the bank and the depositor is necessary in the preparation of the reconciliation statement. All debit entries on the books of one party should be matched by credit entries on the books of the other party; all credit entries should be matched by debit entries on the books of the other. For example, a deposit is a debit to the bank on the depositor's records, a credit to the depositor's account on the bank's records. A check drawn by a depositor is a credit to the bank on the depositor's books and a debit to the depositor's account on the bank's records. These transactions are illustrated below:

BANK'S BOOKS		DEPOSITOR'S BOOKS	
Mason Inc., Depositor		Cash (First National Bank)	
Checks	Deposits	Deposits	Checks

When the two records are compared, certain items may appear on one record and not on the other, resulting in a discrepancy in the two balances. For example, checks may have been entered in the cash records but may not yet have been presented for payment at the depositor's bank. The subtraction then appears on the depositor's record but not on the bank statement. In another instance, receipts of cash shown on the cash record may not be deposited until the following day; the bank statement balance, therefore, may not show the addition for receipts of the last day of the period covered. Other items resulting in discrepancies in the two records may include charges and credits made by the bank: for example, collection and protest fees

charged by the bank to the depositor, various service and interest charges made by the bank, and credits for drafts and notes collected by the bank on behalf of the depositor. The depositor may be unaware of these charges and credits until the bank statement is received.

If, after considering the items mentioned, the bank statement and the book balances cannot be reconciled, a detailed analysis of both the bank's records and the depositor's records may be necessary to determine whether errors have been made by either party in summarizing cash activities. The bank reconciliation, then, is a means of determining the accuracy of the cash records as they stand, as well as a basis for bringing the depositor's records up to date. In view of the reciprocal nature of the depositor's and the bank's records, required adjustments in the two balances, apart from any corrections for errors that may be required, fall under one of four headings as follows:

BANK'S BOOKS		DEPOSITOR'S BOOKS	
Mason, Inc., Depositor		Cash (First National Bank)	
	Balance per statement xxx	Balance per account xxx	
(1) Credits on depositor's records not shown above.	(2) Debits on depositor's records not shown above.	(3) Credits on bank statement not shown above.	(4) Debits on bank statement not shown above.

Examples of each of the four types of adjustments are listed below:

- (1) Outstanding checks not yet cleared by the bank.
- (2) Deposits entered on the books of the depositor but not yet deposited in the bank.
- (3) Collection of a note for the depositor by the bank, credited to the depositor's account and reported to him on his monthly statement.
- (4) Bank service charges charged to the depositor's account and reported to him on his monthly statement.

There are two forms of the reconciliation statement. One form requires that both the bank and the company balances be brought to the same corrected balance by adjustments for all information not yet reflected on the respective books. Another form begins with the bank balance and reports the adjustments that must be applied to this balance to obtain a reconciliation with the cash balance as shown on the depositor's books. The first form is illustrated on page 156; the second, on page 157.

The first form brings both figures to the corrected cash balance for statement purposes. It is set up in two sections, the bank statement figures being adjusted in the first section and the cash account figures

MASON, INC.  
BANK RECONCILIATION STATEMENT  
November 30, 1953

Balance per bank statement, November 30, 1953 .....		\$2,979.72
Add: Receipts for November 30 not yet deposited . . .	\$658.50	
Charge for interest made to depositor's account by bank in error .....	12.50	671.00
		<u>\$3,650.72</u>
Deduct: Outstanding checks:		
No. 1125 .....	\$ 58 16	
No. 1138 .....	100.00	
No. 1152 .....	98.60	
No. 1154 .....	255.00	
No. 1155 .....	192 07	703.83
		<u>\$2,946.89</u>
Adjusted bank balance .....		\$2,946.89
Balance per cash account, November 30, 1953 .....		\$2,552.49
Add: Proceeds of draft collected by bank Novem- ber 30 .....	\$498.50	
Check No. 1116 for \$46 recorded by depositor at \$64 in error .....	18.00	516.50
		<u>\$3,068.99</u>
Deduct: Service charges .....	\$ 3.16	
Customer's check deposited November 29 found to be uncollectible .....	118 94	122 10
		<u>\$2,946.89</u>
Adjusted cash balance .....		\$2,946.89

**Reconciliation of Bank and Cash Balances with Corrected Cash Balance**

being adjusted in the second section. The first section contains items (1) and (2) listed on page 155 that the bank has not yet recognized with respect to the depositor, as well as any corrections for errors that may have been made by the bank. The second section contains items (3) and (4) that the depositor has not yet recognized with respect to the bank, as well as any corrections for errors that may have been made by the depositor.

The second reconciliation form simply reports the reasons for the discrepancy between the two cash balances. It should be observed that this approach is frequently required in other types of reconciliations that must be developed in the course of accounting. For example, it may be necessary to reconcile the net income per books with the taxable income as reported on a tax return. In explaining the reasons

MASON, INC.  
BANK RECONCILIATION STATEMENT  
November 30, 1953

Balance per bank statement, November 30, 1953.....		\$2,979.72	
Add: Receipts for November 30 deposited on December 1.....	\$658.50		
Service charges.....	3.16		
Charge for interest made to depositor's account by bank in error.....	12.50		
Customer's check deposited November 29 found to be uncollectible.....	118.94	793.10	
			\$3,772.82
Deduct: Outstanding checks:			
No. 1125.....	\$ 58.16		
No. 1138.....	100.00		
No. 1152.....	98.60		
No. 1154.....	255.00		
No. 1155.....	192.07	\$703.83	
Check No. 1116 for \$46 recorded by depositor at \$64 in error....	18.00		
Proceeds of draft collected by bank on November 30.....	498.50	\$1,220.33	
Balance per cash account, November 30, 1953....		\$2,552.49	

Reconciliation of Bank Balance to Cash Balance

for the discrepancy, as well as proving the accuracy of the related figures, a summary such as follows would be developed:

Net income per books .....	\$12,600
Add expenses not deductible for income tax purposes .....	450
	\$13,050
Deduct income not reportable for income tax purposes .....	1,500
Taxable income per income tax return .....	\$11,550

While the first form of reconciliation of cash on page 156 may be considered preferable because it develops a corrected cash figure and shows separately all of the items requiring adjustment on the depositor's books, some accountants may prefer to use the second form, which is consistent with the nature of the analysis that is required in many other accounting situations.

After reconciling cash balances, the depositor should enter on his books any items appearing on the bank statement and requiring recognition on his books, as well as any corrections for errors discovered on

his own books. The bank should be notified by the depositor of any errors that the bank has made as disclosed in the course of reconciling the balances. The following entries are required on the books of Mason, Inc. by the reconciliation just made.

Cash	498 50	
Collection Fees	1 50	
Notes Receivable		500 00
To record collection of a \$500 time draft by the bank on which bank charges were \$1.50.		
Cash	18 00	
Advertising		18 00
To record correction for check in payment of advertising that was recorded at \$64 instead of the actual amount, \$46.		
Accounts Receivable	118 94	
Miscellaneous General Expense	3 16	
Cash		122 10
To record (1) customer's uncollectible check and (2) bank charges for November.		

After these entries are posted, the cash account will show a balance of \$2,946.89, the amount properly reportable on the balance sheet.

### CASH SHORTAGES

When, during the course of the day, cash records and summaries report a total of cash that is different from the amount available for deposit and it is assumed that cash has been lost or errors have been made in making change, an adjustment is made to a cash short and over account. The net balance in this account may be reported as a financial management item in summarizing profit and loss. A cash shortage resulting from employee defalcation, however, should be charged to an account with the employee or the bonding company liable for such losses. Failure to recover shortages, of course, would mean the recognition of an extraordinary loss.

### MISREPRESENTATION OF CURRENT CONDITION

While a system of internal check may provide for the effective control of cash, careful analysis by the accountant or auditor is still necessary at the end of the accounting period to determine whether transactions are recorded so as to present the cash and current position of the business properly. Certain practices on the part of management designed to present a more favorable current condition than is actually the case are sometimes encountered. Such practices are sometimes referred to as "window dressing." For example, cash records may be kept open for a few

days beyond the end of the fiscal period. Cash received from customers during this period is reported as cash as of the end of the preceding period. A more liquid current position is thus reported. If this cash is then used to pay off creditors and such payments are predated, the ratio of current assets to current liabilities may actually be improved. For example, if the current ratio is 1.5 to 1 with current assets of \$30,000 and current liabilities of \$20,000, recording payment to creditors of \$10,000 will make current assets \$20,000 and current liabilities \$10,000, a current ratio of 2 to 1. Such misstatement of the current ratio is also possible by writing checks at the end of the period in payment of obligations and entering them on the books but withholding the actual mailing of such checks until some later date. Or misrepresentation of both current position and net income is accomplished by predating sales made at the beginning of the new period. A careful examination of the accounting records is necessary to determine whether any practices that result in a misrepresentation of the current condition have been employed. Where such practices are discovered, corrections must be made if the balance sheet is to present financial condition fairly.

**CASH OVERDRAFTS**

A credit balance in the cash account resulting from the issuance of checks in excess of the amount deposited and available for payment of such checks is known as a *cash overdraft* and should be reported as a current liability. The existence of an overdraft may not necessarily occasion any embarrassment to the company if a number of checks are outstanding and deposits are made before checks are actually cleared. When a company has several balances with a single bank, an overdraft may be offset against a positive bank balance for balance sheet purposes. Opinion is divided as to the procedure that should be followed when there is an overdraft in one bank along with a positive balance in another. Some suggest that offset is proper in view of the possibility of clearing the overdraft by the transfer of funds from the positive balance to the account that is overdrawn. A stronger case, however, can be made for the recognition of both an asset and a liability balance: the business has a claim against one party and an obligation to another. If the reporting of an overdraft is to be avoided on the financial statements, an actual transfer of funds should be effected.

**THE CASH BUDGET**

Successful business operations call for intelligent planning and control of activities. The instrument that sets the standards for the future and offers guides and

controls in achieving such standards is the business *budget*. A comprehensive operating budget offers an integrated and detailed plan for the future. Standards are set for sales, production, and expense. The inflow and outgo of cash is planned. Statements are prepared reporting the estimated earnings and financial position in terms of projected operations, financing, and earnings distributions. With a well-organized master plan for integrated and coordinated action by all parts of the organization, operations may be channeled toward achievement of individual and collective goals. Continuous checks are made between actual results of activities and the standards that have been set. Variations are evaluated; adjustment and revisions of the standards are made when appropriate.

A most important part of any budget is the forecast and planning for cash. Cash is the beginning and the end of all business activity, and any plans for the future must be directly related to the cash picture. Even in the absence of a comprehensive budgetary program, attention must be directed to cash, its expected movement, and methods for its proper utilization and control, if financial chaos is to be avoided. Cash must be readily available for all business needs; any cash in excess of current needs and reasonable reserves must be profitably employed. Satisfactory cash management calls for planning by means of a cash budget.

The preparation of a cash budget requires estimates of future cash receipts and cash disbursements. Receipts and disbursements may not be matched in the months to come as the result of a number of factors, the most important of which are the following:

- (1) Purchases and payments to creditors predate sales and collections from customers. Cyclical factors call for heavy seasonal expenditures that are recovered only at some later date.
- (2) Acquisition of plant and equipment items are made at various intervals.
- (3) Long-term debt is retired at various intervals.

With a full consideration of these factors, plans may be set for the establishment and the maintenance of a satisfactory cash balance. In meeting the requirements of (1) above, steps may be taken to provide for a supply of cash through borrowing or through the conversion of marketable securities acquired for such purposes. Upon the recovery of cash through sales, excess cash can be applied to the payment of loans or can be deposited in banks or used for the acquisition of marketable securities. In meeting the requirements of (2) and (3) above, planning can be directed towards the acquisition of cash through long-

term borrowing, through the issuance of additional stock, or through the accumulation of funds arising from the operations of the business unit.

The development of a cash budget is illustrated below. The illustration covers only a part of a year. Ordinarily a cash budget would be developed for a period of a year or longer. The first section of the budget is used to summarize the monthly cash receipts and disbursements originating from normal business operations. The monthly changes in cash are then applied to the opening balances. The additional sources and applications of cash are reported in arriving at the estimated cash balance on hand at the end of the month. The cash budget is usually accompanied by schedules that offer detailed support for the various data summarized thereon. While the cash budget in the example makes reference to a number of schedules, only the schedules in support of collections on trade accounts receivable and payments on trade accounts payable are illustrated. The schedules are given at the top of the following page.

CARVER CO.  
CASH BUDGET  
FOR THREE MONTHS ENDING DECEMBER 31, 1953

	OCTOBER	NOVEMBER	DECEMBER
Cash sales	10,000	15,000	25,000
Collections on accounts receivable (see schedule)	50,000	61,000	80,500
Other receipts (interest, dividend income, per schedule)	2,500	2,000	3,000
	62,500	78,000	108,500
Merchandise payments (see schedule)	68,600	44,100	19,600
Expense payments (see schedule)	25,000	27,500	30,000
Other payments (acquisition of furniture and equipment per schedule)	7,500		
	101,100	71,600	49,600
Cash increase, decrease* for month	38,600*	6,400	58,900
Cash balance at beginning of month	16,500	7,900	14,300
Cash requirements			
Obtained through loans	10,000		
Obtained through sale of marketable securities	20,000		
	7,900	14,300	73,200
Cash applications.			
To payment of loans			25,000
To purchase of marketable securities			35,000
Net cash carried into succeeding month	7,900	14,300	13,200

**CASH BUDGET**  
**SCHEDULE REPORTING COLLECTIONS ON ACCOUNTS RECEIVABLE\***  
**FOR THREE MONTHS ENDING DECEMBER 31, 1953**

	ESTIMATED SALES	OCTOBER	NOVEMBER	DECEMBER
August	40,000	4,000		
September	50,000	40,000	5,000	
October	60,000	6,000	48,000	6,000
November	80,000		8,000	64,000
December	105,000			10,500
<b>Total Monthly Collections</b>		<b>50,000</b>	<b>61,000</b>	<b>80,500</b>

\*Terms of sale — no cash discounts; payments due by the tenth of the month following sale. It is assumed that collections on charge sales will be made as follows:

Month of sale	10%
First month following sale	80%
Second month following sale	10%

**CASH BUDGET**  
**SCHEDULE REPORTING PAYMENTS ON ACCOUNTS PAYABLE\***  
**FOR THREE MONTHS ENDING DECEMBER 31, 1953**

	ESTIMATED PURCHASES	PURCHASER DISCOUNTS	NET PURCHASES	OCTOBER	NOVEMBER	DECEMBER
September	60,000	1,200	58,800	19,600		
October	75,000	1,500	73,500	49,000	24,500	
November	30,000	600	29,400		19,600	9,800
December	15,000	300	14,700			9,800
<b>Total Monthly Payments</b>				<b>68,600</b>	<b>44,100</b>	<b>19,600</b>

\*A 2% cash discount is allowed by vendors on payments made within 10 days from date of purchase. It is assumed that discounts will be taken on all purchases; payments to be made as follows:

Month of purchase	60%
Month following purchase (first 10 days)	33%

**NATURE OF TEMPORARY INVESTMENTS**

A company with an excess of available cash may deposit such funds as a time deposit or under a certificate of deposit at a bank, or it may purchase securities. Income will thus be produced that would not be available if cash were left idle. Investments made during seasonal periods of low activity can be converted into cash in periods of expanding operations. Asset items arising from temporary conversions of cash are commonly reported in the current asset section of the balance sheet under the heading "Temporary Investments."

Securities that are purchased as temporary investments should actually be marketable on short notice. There should be a day-to-day market for them, and the volume of trading in the securities should be sufficient to absorb a company's holdings without considerably affecting the market price. While there may be no definite assurance that the securities will be disposed of without loss, it is essential that any

possible loss resulting from such disposal be kept at a minimum. Securities that have a limited market and fluctuate widely in price are not suitable for temporary investments. The prices of United States government securities tend to be relatively stable and the market for these securities is quite broad. Because of these factors, short-term government securities are particularly favored despite their relatively low interest rates.

**COMPOSITION OF TEMPORARY INVESTMENTS**

Investments qualify for reporting as temporary investments so long as (1) they are readily available for conversion into cash and (2) it is management's intent to sell them to take care of cash requirements. Such investments may be converted into cash within a relatively short period after being acquired, or they may be carried for some time. In either case, however, since they represent a ready source of cash, they are properly shown under the current heading. The following types of investments do not qualify as temporary investments, and care should be taken that these are not included in the current section: (a) reacquired shares of the company's own stock, (b) securities held in subsidiary companies, (c) securities held for maintenance of business relations, and (d) other securities that cannot be used or are not intended to be used as a source of funds.

**RECORDING PURCHASE AND SALE OF MARKETABLE SECURITIES**

Stocks and bonds acquired as temporary investments are recorded at cost, which includes brokers' fees, taxes, and other charges relating to the purchases. When bonds are acquired and a charge is made for accrued interest, Interest Income is debited. This account is subsequently credited when interest for a full period is received or when the bonds are sold and accrued interest to the date of sale is received. The income account then shows the amount actually earned during the period of ownership. Upon sale of the bonds, the difference between the cost and the sales price is reported as the gain or the loss on the sale.

The entries that are required for a temporary investment in bonds are illustrated in the example on page 164.

It should be observed that bonds are normally issued in \$1,000 denominations, and purchase at  $104\frac{1}{4}$  indicates payment at the rate of \$104.25 per \$100, or \$1,042.50 per \$1,000 bond. Bonds with a face value of \$100,000, then, cost \$104,250. In the calculation of accrued interest on the purchase and the sale of bonds other than obligations of the United States, each month is considered to have 30 days. Accrued

Transaction	Entry
<b>April 1, 1953</b> Purchased \$100,000 National Corp. Bonds at 104 $\frac{1}{4}$ . Interest at 3% is payable semiannually on June 1 and December 1. Payment was made as follows: Bonds of \$100,000 at 104 $\frac{1}{4}$ ...\$104,250 Costs incident to purchase..... 120 Interest Dec. 1 Apr. 1..... 1,000  Total amount paid.....\$105,370	Marketable Securities—Investment in National Corporation 3's..... 104,370 Interest Income... 1,000 Cash..... 105,370
<b>June 1, 1953</b> Received semiannual interest on investment.	Cash..... 1,500 Interest Income.. 1,500
<b>November 1, 1953</b> Sold \$100,000 National Corp. bonds at 103 $\frac{7}{8}$ . Cash proceeds were as follows: Bonds of \$100,000 at 103 $\frac{7}{8}$ ...\$103,875 Interest June 1–November 1 1,250 ----- \$105,125 Less costs incident to sale..... 100 ----- Net amount received.....\$105,025	Cash..... 105,025 Loss on Sale of Marketable Securities..... 595 Interest Income.. 1,250 Marketable Securities — Investment in National Corporation 3's ..... 104,370

interest on the purchase for four months in the above example is computed for 120/360 of a year. If the purchase were made on April 12 instead of April 1, interest would be calculated for four months and eleven days or 131/360 of a year. In the case of federal obligations, the exact number of days is determined and the year is considered to have 365 days in calculating the fractional part of the annual interest that is accrued.

The employment of cash for seven months in the above example produced a net income of \$1,155, the difference between interest income of \$1,750 and the loss on the sale of \$595. A decrease in the market price of the bonds of two points in place of the  $\frac{3}{8}$  point decline shown (104 $\frac{1}{4}$ –103 $\frac{7}{8}$ ) would have made the investment unprofitable to the corporation.

When an investment in securities consists of several purchases and a part of the holdings is sold, a question arises as to what part of the total cost is to be related to the sale in calculating the gain or the loss

on the sale. Federal tax regulations do not permit the use of an average cost, but provide that where a lot sold cannot be related to a specific purchase, cost is determined on a first-in, first-out basis. Earliest costs, then, are applied against sales proceeds. Normally, it is possible to identify the lot sold and to use the related cost; but if several certificates have been turned in for a single certificate covering the entire holdings, the cost of a sale of only a part of the holdings would have to be calculated on a first-in, first-out basis. Ordinarily, security investment accounts are maintained in accordance with the tax law requirements so that analyses and adjustments will not be required in converting accounting data for tax return purposes. Entries to illustrate investments in stock are shown in the example that follows:

Transaction	Entry
<b>April 1, 1953</b> Purchased 100 shares of Wilson Co. 4% Preferred, par \$100, at 103 $\frac{1}{4}$ . Payment was made as follows: 100 shares at 103 $\frac{1}{4}$ \$10,312.50 Costs incident to purchase                      50.00  Total amount paid                      \$10,362.50	Marketable Securities — Wilson Preferred                      10,362.50 Cash    10,362.50
<b>June 1, 1953</b> Purchased 100 shares of Wilson Co. 4% Preferred at 109 $\frac{1}{4}$ . Payment was made as follows: 100 shares at 109 $\frac{1}{4}$ \$10,975 00 Costs incident to purchase                      50.00  Total amount paid                      \$11,025.00	Marketable Securities — Wilson Preferred                      11,025.00 Cash    11,025.00
<b>July 1, 1953</b> Received semiannual dividends on investment.	Cash                                      400.00 Dividend Income                                      400.00
<b>November 1, 1953</b> Sold 100 shares of Wilson Co. 4% Preferred at 108. Cash proceeds were as follows: 100 shares at 108                      \$10,800.00 Less costs incident to sale                      40.00  Net amount received <u>\$10,760.00</u>	Cash                                      10,760.00 Marketable Securities — Wilson Preferred                      10,362.50 Gain on Sale of Marketable Securities                      397.50

It is assumed in the foregoing example that the lot acquired first was sold, resulting in a gain of \$397.50. The balance of the investment account was \$11,025, the cost of the second purchase. If the second lot had been sold instead of the first, a loss of \$265 would have resulted, but the cost of the remaining asset would then have been \$10,362.50 for subsequent accounting and tax purposes.

**VALUATION OF  
MARKETABLE  
SECURITIES**

Three practices of valuing marketable securities are found: (1) cost, (2) cost or market, whichever is lower, and (3) market.

*Cost.* Marketable securities are frequently carried at cost. Such procedure defers recognition of gains or losses until the time the asset is sold. At this time investment cost is matched against investment proceeds. Disclosure of the market value of securities is made parenthetically or otherwise on the balance sheet so that this information may be recognized for analysis purposes. The cost basis finds support as an extension of the matching process. It is consistent with tax requirements. The reader of the statement has information concerning investment costs of the marketable securities on hand as well as current realizable values.

*Cost or Market, Whichever is Lower.* Cost or market, whichever is lower, is the procedure most commonly applied in the valuation of marketable securities. This valuation procedure calls for the recognition of decreases in the values of securities prior to their sale. Such practice is supported on the grounds that current quoted values offer an objective appraisal of the future worth of these assets. To continue to report securities at cost when market values are less than cost is to misrepresent the working capital measurement as well as total assets and hence the owners' capital. Although value decreases are recognized, this method calls for no recognition of value increases. Refusal to recognize increases represents the application of the conservative doctrine that calls for the recognition of losses though unrealized but for no anticipation of gains. Valuation at the lower of cost or market is also favored because it is consistent with the valuation method that is so widely employed for inventories.

The lower of cost or market rule may be employed in two ways: (1) it may be applied to securities in the aggregate or (2) it may be applied to the individual items. To illustrate, assume investments with costs and market values on December 31, 1953, as given at the top of the following page.

	COST	MARKET	LOWER OF COST OR MARKET ON INDIVIDUAL BASIS
1,000 shares of Carter Common...	\$20,000	\$16,000	\$16,000
\$25,000 Emerson 5% Bonds.....	25,000	26,500	25,000
	<hr/> \$45,000	<hr/> \$42,500	<hr/> \$41,000

The lower of cost or market value on an aggregate basis above is \$42,500; on an individual basis, \$41,000. It would appear that sufficient conservatism is exercised in reporting securities at \$42,500, the amount that would become available upon conversion of the securities in the aggregate.

Recognition of the value decline on the books calls for the reduction of the asset and a charge to a loss account; however, for tax purposes the loss cannot be recognized and the basis of the securities for measurement of gain or loss upon subsequent sale continues to be original cost. Security costs can be preserved on the books by the use of a valuation account to reduce the securities to market. The following entry may be made to recognize the market fluctuation in the example above:

Recognized Decline in Value of Marketable Securities.....	2,500
Allowance for Decline in Value of Marketable Securities.....	2,500

The balance sheet would show:

Marketable securities, at cost .....	\$45,000
Less: Allowance for decline in value of marketable securities .....	2,500
Securities at market value, December 31, 1953....	\$42,500

This information could also be reported:

Marketable securities (cost \$45,000) at market....	\$42,500
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The \$2,500 loss may be reported on the income statement as a financial management expense or as an extraordinary loss, whichever may be considered appropriate.

Assuming in the example above that the securities are sold in January, 1954, for \$43,000, an entry is made as follows:

Cash.....	43,000	
Allowance for Decline in Value of Marketable Securities.....	2,500	
Marketable Securities—Carter Common.....		20,000
Marketable Securities—Emerson 5% Bonds....		25,000
Gain on Sale of Marketable Securities.....		500

Neither the \$2,500 loss nor the \$500 gain would be recognized for tax purposes; instead, a \$2,000 loss would be reported on the tax return for 1954 when securities that cost \$45,000 were sold for \$43,000.

When securities have been reduced to a basis of cost or market, whichever is lower, adjustments are normally considered to be necessary in future periods only in the event of further declines. Having established a lower basis, this may be considered as replacing cost for further comparisons with market. A market in excess of such substitutes for "cost" is thus ignored until sale of the asset takes place.

*Market.* There is some support for reporting marketable securities at current market values, whether higher or lower than cost. Those supporting this position maintain that, with definite evidence as to market values available, one would be derelict in failing to incorporate the full effect of such evidence in a statement that purports to disclose working capital and the over-all financial position. Further, it is maintained that the recognition of losses has been generally accepted and justified on the grounds of adequate disclosure; consistency would call for similar recognition to be accorded to gains. The arguments in support of this position are not without merit. Further, the objectives of this approach can be met without distorting profit or loss measurements in terms of costs and revenues by applying appraisal accounting procedures to investments. For example, assume that securities costing \$50,000 have quoted values of \$60,000 on December 31. Securities are sold at \$62,000 in March of the following year. An unrealized gain may be reported on December 31. This is canceled when the securities are sold and the effect of the sale is reported in profit and loss. The following entries may be made:

Dec. 31, 1953	Marketable Securities	10,000	
	Revaluation Surplus—Increase in Marketable Securities to Current Value		10,000
March, 1954	Cash . . . . .	62,000	
	Revaluation Surplus—Increase in Marketable Securities to Current Value	10,000	
	Marketable Securities		60,000
	Gain on Sale of Marketable Securities		12,000

Such periodic revaluations would have to be disregarded for general tax purposes. The revenue laws, however, do permit a dealer in securities to elect the valuation of periodic security "inventories" at current market in reporting income. Such a valuation method, when permitted, must be applied consistently in successive reportings.

The importance of information concerning market values for items included in the working capital pool is obvious. It should be em-

phasized that when market values are not actually introduced into the accounts, this information should be incorporated by parenthetical remark, footnote, or other appropriate manner in the interest of full disclosure. The Securities and Exchange Commission requirements for statements to be filed with the Commission call for the following with respect to marketable securities reported as current assets:

Include only securities having a ready market . . . State the basis of determining the amount at which carried. The aggregate cost, and aggregate amount on the basis of current market quotations, shall be stated parenthetically or otherwise.<sup>1</sup>

**PRESENTATION OF  
CASH AND TEMPO-  
RARY INVESTMENTS ON  
THE BALANCE SHEET**

For statement purposes, cash may be reported as a single item or it may be summarized under several appropriate headings, such as cash on hand, demand deposits, and time deposits. Ordinarily, temporary investments follow cash and precede receivables and inventories, since current items are reported in the order of their liquidity. When temporary securities are pledged for some particular purpose, the nature and the purpose of such a pledge should be disclosed parenthetically or in some other appropriate manner.

Special mention needs to be made of the practice of reporting investments in United States Treasury tax notes. Corporations do not pay income tax on a pay-as-you-go basis as do individuals but are permitted to pay taxes in installments in the year following the accrual of the tax liability. As part of a "Tax Savings Plan," however, the United States Treasury makes tax notes available for purchase by corporations. Such notes accrue interest at a relatively low rate only if they are applied to payment of future income tax obligations; they are redeemable at no more than original purchase price if they are not applied in such manner. The notes are issued in the name of the purchaser and cannot be transferred or used as collateral. Purchase of such notes, then, represents a temporary investment in securities to be used as tax-paying media, and such investments would properly be reported as current assets. When it is the intent of management, however, to apply these notes in the discharge of tax liabilities, it is considered proper to accrue interest on the notes as of the balance sheet date and to report the full tax value of the notes as a subtraction from the ac-

<sup>1</sup>Regulation S-X (as amended March 19, 1951). This regulation is issued by the Securities and Exchange Commission and states the basic rules as to form and content that are to be observed in the preparation of reports that are required to be filed with the Commission under federal laws. The Commission has released a number of other instruction books and regulations that give the different rules and procedures adopted by the Commission.

crued tax liability. The purchase of the notes is thus recognized, in effect, as an advance payment of taxes. This position has received the sanction of the American Institute of Accountants in Accounting Research Bulletin No. 14 dealing with accounting for United States Treasury tax notes. The Institute points out, however, that the treatment permitted in this particular instance is not to be interpreted as a relaxation of the general rule against the offsetting of asset and liability balances.

Cash and temporary investments, as these might be reported on the balance sheet, are shown below:

Current assets:			
Cash on hand and demand deposits in banks. . . . .			\$46,000
Special cash deposits (to pay accrued interest and dividends) . . . . .			24,000
Time deposits with insurance companies. . . . .			100,000
Marketable securities:			
U. S. Government obligations, at cost, which is approximate market value (\$50,000 deposited in escrow as security on debt of subsidiary company) . . . . .		\$150,000	
Other stocks and bonds (quoted market value, \$44,200) . . . . .	35,000		185,000
Total current assets . . . . .			\$355,000

## QUESTIONS

1. State how each of the following items should be reported on the balance sheet: (a) demand deposits with bank, (b) blocked cash deposits in foreign banks, (c) payroll fund to pay off accrued salaries, (d) change funds on hand, (e) cash on deposit in escrow on purchase of property, (f) cash in a special cash account to be used currently for the construction of a new building.

2. (a) Define "internal check." (b) Suggest the different techniques that might be employed in adopting a system of internal check for cash.

3. (a) Explain "check kiting" and "lapping." (b) Mention at least six other practices that result in misappropriation of cash in the absence of an adequate system of internal check.

4. (a) What two methods may be employed in the establishment of a petty cash fund? (b) Which would you recommend? Why?

5. (a) What two methods may be employed in reconciling the bank and the cash balances? (b) Which would you recommend? Why? (c) Name at least two other circumstances that call for the preparation of reconciliations.

6. The following items were found in the cash drawer on June 30, and had been included as Cash on the balance sheet for the Mitchell Co. How should each of the items have been reported?

- (a) Customer's check for \$200 returned by the bank marked "Not Sufficient Funds."
- (b) Customer's check for \$150 dated July 5.
- (c) Cashier's note for \$100 with no due date.
- (d) Postage stamps received with box tops for prizes, \$9.83.
- (e) Postal money orders from customers awaiting deposit, \$45.
- (f) Receipt for expense advances to buyers, \$175.
- (g) Change fund, \$100 in coins.

7. The Kern Co. engaged in the following practices at the end of a fiscal year:

- (a) Sales on account from January 1—January 5 were predated as of the month of December.
- (b) Checks in payment of accounts were prepared on December 31 and were entered on the books, but they were placed in the safe awaiting instructions for mailing.
- (c) Customers' checks returned by the bank and marked "Not Sufficient Funds" were ignored for statement purposes.

Explain what is wrong with each of the practices mentioned and indicate the entries that are required to correct the accounts.

8. (a) What is the nature of a budget? (b) What is a cash budget? (c) Describe the preparation of the cash budget and the nature of the problems encountered in maintaining a "healthy" cash status.

9. On reconciling the cash account with the bank statement, it is found that the general cash fund is overdrawn \$436 but that the bond redemption account has a balance of \$5,400. The treasurer wishes to show Cash as a current asset at \$4,964. Discuss.

10. Define "temporary investments." Distinguish between "temporary investments" and "marketable securities."

11. (a) What theories are held with respect to the valuation of marketable securities? (b) What arguments can be advanced in support of each and which position do you feel has greatest merit?

12. Hanson Products Co. acquired marketable securities in 1953 for \$60,000. In June, 1954, these securities have a market value of \$85,000. The treasurer insists that the balance sheet as of June 30 should show the securities at \$85,000, since they were "just as good as cash." Comment on this proposal.

13. State two methods for reporting United States Treasury tax notes and give arguments in support of each.

14. The accountant for the Goodwin Co. has offset balances as follows in preparing a balance sheet:

United States Treasury Tax Notes, \$14,000, has been offset against Estimated Federal Income Taxes Payable, \$20,000.

An overdraft of \$120 in the Payroll Fund kept with the Second National Bank has been offset against the general cash balance kept with the same bank.

Advances of \$500 to buyers have been offset against accrued sales salaries of \$1,200.

\$1,000 receivable from Jones Wholesalers has been offset against a note payable of \$1,200 that was sent to Jones Wholesalers as a result of a previous purchase.

Comment on the foregoing practices.

15. Stanley, Inc. posted from all of its books of original entry except the cash book on June 30. The bookkeeper kept the cash book open until July 10 in order to show cash collections of \$10,000 and payments to short-term creditors of \$10,000. (a) Do you approve? (b) If the balance sheet showed a current ratio of 2 to 1 with current assets of \$20,000 and current liabilities of \$10,000, what was the correct current ratio?

## EXERCISES

1. An examination on the morning of January 2 by the auditor for the Davis Manufacturing Company shows the following items in the petty cash drawer:

Currency and coin . . . . .	\$ 12 56	
IOU's from members of the office staff . . . . .	60.00	
An envelope containing collections for a football pool, with office staff names attached . . . . .	10.00	
Petty cash vouchers for:		
Typewriter repairs . . . . .	\$2 50	
Stamps . . . . .	5.00	
Telegram charges . . . . .	6 50	14.00
Employee's check postdated January 15 . . . . .	50.00	
Employee's check marked "N.S.F." . . . . .	70.00	
Check drawn by Davis Manufacturing Company to Petty Cash . . . . .	92.00	
	--	
		\$308.56

The ledger account shows a \$300 balance for Petty Cash. (a) What adjustments should be made on the auditor's working papers in order that petty cash may be correctly stated on the balance sheet? (b) What is the correct amount of petty cash for the balance sheet? (c) How could the practice of borrowing by employees from the fund be discouraged?

2. In auditing the books of McDonald, Inc. for 1953, you find that a petty cash fund of \$250 is maintained on the imprest basis, but the company has failed to replenish the fund on December 31. Replenishment was made and recorded on January 15, 1954, when a check for \$185 was drawn to petty cash for expenses paid. Your analysis discloses that \$125 had been spent out of petty cash in 1953. What entry would be made in correcting the records?

3. The Wilson Co. receives its bank statement for the month ending June 30 on July 2. The bank statement shows a balance of \$231. The cash account as of the close of business on June 30 shows a credit balance of \$123. In reconciling the balances, the auditor discovers the following:

Receipts of June 30, \$1,860, were not deposited until July 1.

Checks outstanding on June 30 were \$2,215.

The bank has charged the depositor for overdrafts, \$10.

A canceled check to S. S. Dohr for \$56 was entered in cash payments in error as \$65.

Prepare a bank reconciliation statement. (Use the form that reconciles bank and depositor figures to corrected cash balances.)

4. The following data are assembled in the course of reconciling the bank balance as of December 31, 1953, for A. P. Moore Co. What cash balance will be found on the company books, assuming no errors on the part of the bank and the depositor?

Balance per bank statement . . . . .	\$1,512.60
Checks outstanding . . . . .	1,805.00
December 31 receipts recorded but not deposited . . . . .	320.00
Bank charges for December not recognized on book . . . . .	7.50
Draft collected by bank but not recognized on books . . . . .	615.00

5. The Warren Co. completed the transactions in marketable securities listed below during 1953. What are the entries to record the transactions? (Commissions and other charges are omitted.)

- Purchased \$10,000 Martin & Co.  $3\frac{1}{2}\%$  bonds paying  $96\frac{1}{2}$  plus accrued interest of \$40.
- Purchased 200 shares of Scoville common stock at 19.
- Purchased 300 shares of Scoville common stock at 21.
- Received semiannual interest on Martin & Co. bonds.
- Sold the 300 share lot of Scoville common at  $22\frac{1}{2}$ .
- Sold \$5,000 Martin & Co. bonds at 95 plus accrued interest of \$15.

6. The Westlake Co. acquired 3,000 shares of Nelson Corporation common in three 1,000-share lots at costs of 10,  $12\frac{1}{4}$ , and 17 respectively. One thousand shares of the stock are sold in 1953 at  $16\frac{1}{2}$ . (a) What is the entry to record the sale? (b) Assuming that operations for 1953 are profitable and that the Westlake Co. would like to avoid recognizing a profit on the sale of this security in 1953, what recommendations would you make?

7. An examination of marketable securities on hand for the Cross Corporation on December 31 discloses the following cost and market values:

	Total Cost	Market Quotations on Dec. 31
500 shares of Sailyers Common . . . . .	\$12,000	$16\frac{1}{4}$
\$60,000 Randall Co. First Mortgage 5's . . . . .	61,000	$102\frac{1}{2}$

Show how this information would be presented on the balance sheet following three different valuation procedures that might be employed.

## PROBLEMS

**6-1.** The cash account of J. H. Henley Co. showed a balance of \$2,696.48 on April 30, 1953. The bank statement as of April 30 showed a balance of \$1,849.83. Upon comparing the statement with the cash records, it was found that: (1) Henley's account had been charged for a customer's uncollectible check amounting to \$407.20 on April 26; (2) a two-month, 6%, \$1,000 note dated February 25, discounted on April 12, had been protested April 26, protest fees, \$2.90; (3) a customer's check for \$90 had been entered as \$70 both by the depositor and the bank but was later corrected by the bank; (4) check No. 742 for \$392 had been entered in the cashbook as \$329, and check No. 747 for \$42.10 had been entered as \$421; (5) there was a bank service charge for the month of March amounting to \$9.72; (6) a bank memo stated that R. R. Capp's note for \$600 had been collected April 29 (the note had been sent to the bank for collection on April 27 but no entry had been made at that time); (7) receipts of April 30 for \$1,640 were not deposited until May 2.

The following checks were outstanding on April 30:

No. 712	\$ 96.10	No. 785	\$ 29.36
740	43.20	786	150.00
782	135.00	787	139.43
784	381.50	788	312.68

*Instructions:* (1) Construct a bank reconciliation statement, using the form where both bank and cash balances are reconciled with corrected cash balance (the form illustrated on page 156).

(2) Give the journal entries required as a result of the information given above. (Assume that the company makes use of the voucher system.)

**6-2.** The Walsh Corporation received its bank statement for the month ending June 30, 1953. The auditor, in attempting to reconcile the statement with the books, discovered the following:

The cashier, who was also the bookkeeper, had misappropriated \$250 by "lapping" and an additional \$140 by passing a noncash credit through the sales returns and allowances account.

The bank had charged the depositor with: protest fee, \$2.50; collection charges, \$3.49; and telegram, \$1.60.

A check made payable to A. R. Barnes in payment of an account for \$30 was incorrectly recorded as \$20.

Outstanding checks were as follows:

No. 112	\$ 68.50	No. 153	\$ 268.28
138	227.00	154	532.23
152	85.07	155	1,225.50

Receipts of June 30 for \$1,154.63 were not deposited until July 1.

The balance on the bank statement was \$869.40. The cash account showed an overdraft of \$364.96.

*Instructions:* (1) Prepare a bank reconciliation statement, using the form where the bank balance is reconciled with the balance per books (the form illustrated on page 157.)

(2) Give all of the required journal entries indicated by the preceding.

**6-3.** A bank statement for the Medwick Co. shows a balance as of December 31 of \$1,765.08. The cash account for the company as of this date shows an overdraft of \$73.92. In reconciling the statement with the books, the following items are discovered:

(1) The cash balance includes \$200 representing change cash on hand. When the cash on hand is counted, only \$192.50 is found to be on hand.

(2) The cash balance includes \$300 representing a petty cash fund. Inspection of the petty cash fund reveals cash of \$210 on hand and a replenishing check drawn on December 31 for \$90.

(3) Proceeds from cash sales of \$580 for December 27 were stolen. The company expects to recover this amount from the insurance company and has made no entry for the loss.

(4) The bank statement shows the depositor charged with a customer's N.S.F. check for \$75, bank service charges of \$21.50, and a check for \$86 drawn by Merritt, Inc. and incorrectly cleared through this account.

(5) The bank statement does not show receipts of December 31 of \$1,214, which were deposited on January 2.

(6) Checks outstanding were found to be \$4,315.50. This includes the check transferred to the petty cash fund and also two checks for \$110 each payable to W. A. Fox. Fox had notified the company that he had lost the original check and had been sent a second one, the company stopping payment on the first check. Among the checks outstanding, one for \$60 has been outstanding for fourteen months, and it is decided to cancel this item since the payee cannot be found and payment may never be claimed.

*Instructions:* (1) Prepare a bank reconciliation statement, using the form where both bank and cash balances are reconciled with the corrected cash balance (form illustrated on page 156).

(2) Give the correcting entries required by the foregoing.

(3) List the cash items as they should appear on the balance sheet on December 31.

**6-4.** The Benson Co. shows the following information relating to marketable securities on its balance sheet on December 31, 1952:

Davis \$3 Preferred, 500 shares.....	\$ 8,930.50
Eaton Manufacturing Common, 100 shares .....	2,365.00
Fulton 4% Preferred, 100 shares. ....	1,950.00
Garfield Co. First Mortgage 4½% Bonds (face \$10,000).....	9,980.00
<hr/>	
Total Marketable Securities (current market value, \$26,600)	\$23,225.50
Accrued Interest on Garfield Co. Bonds.....	112.50
	<hr/>
	\$23,338.00

Purchases and sales of securities during 1953 are given on the following page.

- Jan. 15. Purchased 100 shares of Eaton Manufacturing Common at  $18\frac{3}{4}$  plus costs of \$30.  
 Jan. 20. Received quarterly dividend on Davis Preferred.  
 Mar. 15. Sold holdings in Davis Preferred and Fulton Preferred at  $20\frac{7}{8}$  and 22 respectively. Costs of \$150 and \$60 respectively were incurred on the sales.  
 Mar. 25. Sold Eaton Manufacturing Common (acquired on January 15) at  $16\frac{1}{2}$  less costs of \$40.  
 Apr. 1. Received semiannual interest on Garfield Co. First Mortgage Bonds.  
 May 1. Sold Garfield Co. First Mortgage Bonds at  $102\frac{3}{4}$  plus accrued interest, less costs of \$150.  
 Dec. 11. Purchased \$10,000 Torrance Co. 5% bonds at 95 plus accrued interest and additional costs of \$100. Interest on bonds is payable on May 1 and November 1.  
 Dec. 15. Purchased 100 shares of Purcell Co. 6% Preferred at 105 plus costs of \$90.

On December 31, market quotations of securities owned were as follows: Eaton Manufacturing Common,  $15\frac{1}{2}$ ; Torrance Co. bonds,  $94\frac{1}{2}$ ; Purcell Co. Preferred,  $101\frac{1}{2}$ . It is decided to reduce the investments to current market value for balance sheet purposes by means of a valuation account.

*Instructions:* (1) Journalize the foregoing, including any adjustments required on December 31, 1953.

(2) Show the information relating to marketable securities as it would appear on the balance sheet prepared on December 31, 1953.

**6-5.** The balance sheet of Bell and Commons Co. shows the following current assets as of December 31, 1953:

Current assets:

Cash	\$100,807 92
Temporary investments	208,245 00
	<hr/>
	\$309,052 92

In examining the books, the following information is revealed with respect to the current assets:

Cash includes a demand deposit of \$21,119.92 at the First National Bank; a time deposit of \$12,000 that may not be withdrawn until after April 1, 1955; customers' checks not yet deposited, \$600, and customers' returned N.S.F. checks, \$200; a demand deposit of \$12,170, which is unavailable, being in a bank in a foreign country at war; an overdraft of \$340 in the Second National Bank; a time deposit of \$8,000 in a building and loan savings association that is closed; advances of \$2,000 to officers; sinking fund cash of \$19,758; a pension fund of \$25,000 for employees; and a petty cash fund of \$300, of which \$75 is cash, \$60 is in the form of employees' I.O.U.'s, and \$165 is supported by the receipts for expenses paid out of the fund.

The following securities have been included under the temporary investments heading:

	Cost	Market Value (Including Accrued Interest)
Bell and Commons Co., Treasury Stock . . . .	\$ 12,500.00	\$ 11,750.00
Stock of Elwell Corporation (temporary holding)	4,455 00	4,010.00
Garson and Hale, Inc., 6% bonds (interest payable March 1 and Sept. 1). Face value, \$7,000. Ac- quired on September 1, 1953 (temporary hold- ing) . . . . .	7,210 00	7,225.00
3% United States Treasury Bonds (interest pay- able on March 1 and September 1). Face value, \$20,000. Purchased with pension sinking fund cash. Acquired on September 1, 1953	20,400 00	20,500.00
Allen Co. Stock (temporary holding)	4,012.00	3,750.00
Harper Co. Stock (stock of subsidiary company)	152,750.00	151,950.00
Dodge Corp. Stock (temporary holding)	8,100 00	8,300.00

*Instructions:* Show cash and temporary investments as these items should properly appear in the current assets section of the balance sheet. Provide schedules to show how foregoing balances are determined and what disposition is to be made of items not appropriately shown under the cash and temporary investment headings. Assume that marketable securities are valued at cost or market, whichever is lower, by means of a valuation account.

**6-6.** The Popular Shop asks the controller to prepare a cash forecast for the first three months of 1954. The following information is assembled in developing the forecast.

Sales:	January	\$60,000
	February	65,000
	March	75,000

All sales are made on a credit basis as follows: 2% cash discount if paid by the tenth of the month following the sale; credit period 30 days from end of month in which sale is made. Past experience has shown that 70% of the billings are collected within the first ten days of the month following the sale and are credited with the discount, 20% of the billings are collected during the remainder of the month, and 10% are collected in the second month following sale.

Purchases:	January	\$42,000
	February	45,000
	March	30,000

All purchases are made on terms of 2/10, n/30, and the company follows the practice of taking all discounts on the tenth day following the invoice date. It is assumed that purchases will be distributed evenly throughout the month, purchases for the last third of the month being paid in the first third of the succeeding month.

Selling and general and administrative expenses, excluding depreciation, will be paid as incurred and are anticipated as follows: fixed costs, \$5,000 per month; variable costs, 12½% of gross sales.

The following balances taken from a trial balance on December 31 are to be considered in developing the cash summary:

	DR.	CR.
Cash.....	\$ 1,500	
Accounts receivable:		
November.....	\$ 8,000	
December.....	90,000	98,000
Accounts payable:		
December.....		\$15,000
Bank loan due January 15, 1954.....		15,000
Estimated federal income tax for 1953 ( the company expects to make payment in two installments of \$16,250 on 3/15/54 and 6/15/54).....		32,500

*Instructions:* Prepare a forecast of the cash position by months supported by receipts and payments schedules in forms similar to those illustrated on pages 161 and 162.

**6-7.** The AB Trading Company wishes to prepare a monthly cash budget. The following information is available:

The AB Trading Company purchases merchandise on terms of 2/10, n/60 and regularly takes discounts on the tenth day after the invoice date. It may be assumed that one third of the purchases of any month are due for discount and are paid for in the following month.

The company's sales terms are 2/10, n/30, E. O. M. It has been the company's experience that discounts on 80% of billings have been allowed and that, of the remainder, one half have been paid during the month following billing and the balance during the second following month. (For example, 80% of January billings are collected during the first ten days of February and are allowed a 2% discount; 10% are collected during the rest of February; the remaining 10% are collected in March.)

The average rate of gross profit, based on sales price, is 25%. Total sales for the company's fiscal year ending June 30, 1954, have been estimated at 80,000 units, distributed monthly as follows:

July.....	9%	October...	9%	January....	3%	April.....	7%
August.....	10%	November..	10%	February...	5%	May.....	6%
September...	12%	December..	15%	March.....	6%	June.....	8%

To insure prompt delivery of merchandise, inventories are maintained during January and February at 6% of the number of units estimated to be sold throughout the year, while during the rest of the year they are maintained at 10% of that number. The inventories at December 31 and February 28 should be at the levels intended to be maintained during the respective ensuing seasons.

Total budgeted selling administrative and general expenses for the fiscal year ending June 30, 1954, are estimated at \$312,000, of which \$120,000 are fixed expenses (inclusive of \$24,000 annual depreciation). These fixed expenses are incurred uniformly throughout the year. The other selling and administrative and general expenses vary with sales. In total, these expenses amount to \$192,000, or 12% of total sales for the year. Expenses are paid as incurred, without discounts.

It is assumed that at January 1, 1954, merchandise inventory, at the 6% level, will consist of 4,800 units, to cost \$72,000, before discount, and the cash balance will be \$112,000.

*Instructions:* From the information given above, prepare a monthly cash budget for the three months ending March 31, 1954. (A.I.A. adapted)

**6-8.** The Larchmont Company had poor internal control over its cash transactions. Facts about its cash position at November 30, 1953 were as follows:

The cash books showed a balance of \$18,901.62, which included cash on hand. A credit of \$100 on the bank's records did not appear on the books of the company. The balance per the bank statement was \$15,550, and outstanding checks were #62 for \$116.25, #183 for \$150, #284 for \$253.25, #8621 for \$190.71, #8623 for \$206.80 and #8632 for \$145.28.

The cashier removed all of the cash on hand in excess of \$3,794.41 and then prepared the following reconciliation:

Balance per books, Nov. 30, 1953 .....	\$18,901.62	
Add—Outstanding checks:		
#8621 .....	\$190.71	
#8623 .....	206.80	
#8632 .....	145.28	442.79
		\$19,344.41
Deduct—Cash on hand .....		3,794.41
		<hr/>
Balance per bank, Nov. 30, 1953 .....	\$15,550.00	
Deduct—Unrecorded credit .....	100.00	
		<hr/>
True cash, Nov. 30, 1953 .....	\$15,450.00	

*Instructions:* (1) How much did the cashier remove and how did he attempt to conceal his theft?

(2) Taking only the information given, name two specific features of internal control which were apparently missing. (A.I.A. adapted)

**6-9.** In auditing the Howell Company, you obtain directly from its bank the bank statement, the canceled checks, and other memoranda that relate to the company's bank account for December, 1953. In reconciling the bank balance at December 31, 1953, with that shown on the company's books, you observe the facts set forth below:

(1) Balance per bank statement, 12/31/53 .....	\$88,489.12
(2) Balance per books, 12/31/53 .....	58,983.46
(3) Outstanding checks 12/31/53 .....	32,108.42
(4) Receipts of 12/31/53, deposited 1/2/54 .....	5,317.20
(5) Service charge for November, 1953, per bank memo of 12/15/53 .....	3.85

<del>(9)</del> Proceeds of bank loan, 12/15/53, discounted for 3 months at 5% per annum, omitted from company books. . . . .	\$9,875.00	
<del>(7)</del> Deposit of 12/23/53 omitted from bank statement. . . . .	2,892.41	
<del>(8)</del> Check of Rome Products Co. charged back on 12/22/53 for absence of countersignature and redeposited with complete signature on 1/5/54, no entry on the books having been made for the chargeback or the redeposit. . . . .	417.50	
<del>(10)</del> Error on bank statement in entering deposit of 12/16/53:		
Correct amount . . . . .	\$3,182.40	
Entered in statement . . . . .	3,181.40	1.00
<del>(10)</del> Check No. 3917 of Powell Manufacturing Co., charged by bank in error to company's account. . . . .	2,690.00	
<del>(11)</del> Proceeds of note of J. Somers & Co. collected by bank, 12/10/53, not entered in cash book:		
Principal . . . . .	\$2,000.00	
Interest . . . . .	20.00	
	<hr/>	
	\$2,020.00	
Less collection charge . . . . .	5.00	2,015.00
(12) Erroneous debit memo 12/23/53, to charge company's account with settlement of bank loan, which was paid by check No. 8714 on same date. . . . .	5,000.00	
<del>(13)</del> Error on bank statement in entering deposit of 12/4/53:		
Entered as . . . . .	\$4,817.10	
Correct amount . . . . .	4,807.10	10.00
(14) Deposit of Powell Manufacturing Co. of 12 6 53 credited in error to this company . . . . .	1,819.20	

*Instructions:* (1) Prepare a reconciliation of the Howell Company's bank account at December 31, 1953.

(2) Prepare one or more journal entries to adjust the Howell Company's books to reflect the correct bank balance at December 31, 1953. (A.I.A. adapted)

## *Receivables*

### **NATURE OF RECEIVABLES**

In its broadest sense a receivable is any claim for money from outsiders. Usually, the chief source of receivables is found in the normal activities of the operating cycle of the business. Business today is largely based on credit. Goods and services are sold on account, the collection of the accounts following some time after the sales. In the meantime the seller has claims against the buyers. Other receivables arise as a result of such diverse activities as advances made by a company, the sale of plant and equipment items, and the sale of stock. One class of receivables, bonds has already been described. This item, however, is classified as an investment in view of its nature and marketability.

### **COMPOSITION OF RECEIVABLES**

Receivables are composed of notes and accounts. A note is an unconditional written promise by one party to another to pay a certain sum of money at a specified date. The note may be negotiable or nonnegotiable. It is negotiable or legally transferable by endorsement and delivery only if it provides for payment to the order of the second party or bearer. Such notes are commonly accepted by commercial banks for discount, hence are considered more liquid than are other classes of receivables.

The term "notes" is commonly used in accounting to include not only promissory notes but also time drafts and trade acceptances. If the amount of the time drafts and the trade acceptances is material, they might be summarized separately.

The notes receivable designation for reporting purposes should be limited to negotiable short-term instruments that are acquired from trade debtors and that are not yet due. When a written instrument fails to meet these requirements, it should be reported separately under an appropriately descriptive title.

Accounts receivable broadly include all receivables other than those supported by some form of commercial paper. While it would be appropriate to refer to receivables arising from the sale of goods and services as "Trade Debtors" or "Customer Receivables" to distinguish these from other receivables, it has become established practice to use the

designation "Accounts Receivable" to represent this group. Accounts Receivable for reporting purposes should be limited to trade accounts that are expected to be converted into cash in the regular course of business. This balance, for example, should not include receivables arising from customer container charges that will be liquidated by the return of containers.

All receivables other than regular trade accounts should be summarized in appropriately titled accounts indicating their special nature and should be reported separately. The following are examples of the items that are separately shown: claims arising from the sale of securities or property other than goods or services; claims on uncompleted contracts; advances to officers, agencies, and affiliated companies; deposits with creditors and other agencies; purchase prepayments; claims against transportation companies or insurance companies for losses or damages; claims for rebates and tax refunds; interest and dividends receivable on investments; and claims upon subscribers to capital stock.

As indicated in an earlier chapter, the current asset classification as broadly conceived comprehends all receivables identified with the normal operating cycle. Installment and deferred payment items are fully included regardless of the terms of collection. But receivables arising outside of the inventory-to-cash cycle qualify as current only if they are expected to be collected within one year. For balance sheet classification purposes, then, each nontrade item requires separate analysis to determine whether there is reasonable certainty that it will be collected currently.

Amounts due from officers, directors, and major stockholders arising out of sales and subject to the usual credit terms are normally considered current; however, when claims have arisen from transactions other than sales and current recovery is not assured, such items are appropriately regarded as noncurrent. Sales to affiliated companies may be considered to give rise to current claims, but advances to such companies are generally regarded as of a long-term nature. Deposits on utility contracts may be considered long-term, whereas deposits on material and merchandise ordered will soon represent inventories and hence are current. Deposits for machinery and equipment ordered are noncurrent in view of the ultimate application of the deposit. Claims arising from the sale of assets other than goods or services and calling for collections over a period in excess of one year require special analysis to determine the portion of the claim to be reported as current and that to be reported as noncurrent.

Subscriptions to capital stock are current only so long as it is assumed that they are currently collectible; when current collection is not probable or when payments may be deferred indefinitely, such balances are reported as noncurrent assets or in some instances more appropriately as subtractions from capital balances so that no more than the amount actually paid in by stockholders and subscribers is reflected as invested capital.

When income tax refunds or other claims have been granted and collection is expected within one year, they qualify for current presentation. When claims are still being processed and recovery is assured although the period required for such processing is uncertain, claims are shown under a noncurrent heading. When claims are in process and the amounts that may be allowed, if any, are uncertain, such items should not be recognized as assets; instead, if significant in amount, the item and its contingent nature may be pointed out by a parenthetical remark in the asset section of the balance sheet, by a footnote or note accompanying the statement, or by appropriate comment under a separate contingent asset heading following asset classifications on the balance sheet.

Creditor and customer accounts with contra balances require special attention. These balances are found by an analysis of subsidiary ledger detail. For example, assume that the accounts payable controlling account reports a balance of \$10,000. Inspection of subsidiary account detail reveals accounts with credit balances totaling \$10,500 matched by accounts with debit balances of \$500. The nature of the debit balances should be investigated. If the debit balances have arisen as a result of overpayments or returns and allowances after payment, they are reportable as current assets in view of the claim to cash or merchandise that they represent. Such balances are properly reported under a title such as "Creditors' Accounts with Debit Balances" or "Sundry Claims." If the debit balances have resulted from advance raw material or merchandise purchase payments by the company, these too represent a current asset reportable under some descriptive title such as "Advances on Purchase Contracts." In either case Accounts Payable is reported at \$10,500. Although both an asset and a liability are reported, no adjustment to the controlling account or the subsidiary ledger detail is required. Debit balances in the subsidiary ledger are carried forward and are ultimately canceled by further purchase billings or cash settlement.

Customer ledger detail needs similar analysis. Customers' accounts with credit balances may result from overpayments, from customer

returns after full payment, or from advance payments by customers. Such credits may qualify either as current liabilities or as deferred credits to income and should be reported accordingly under appropriate titles. Accounts receivable, then, are reported at the sum of the *debit balances reported in the subsidiary ledger.*

*It may be pointed out that when contra balances in customer and creditor accounts are relatively insignificant in amount, they are frequently disregarded and only the net receivable or payable balance as shown by the controlling account is reported on the balance sheet.*

### **VALUATION OF RECEIVABLES**

Notes receivable are normally reported at their face value. Thus non-interest-bearing notes are shown at face values although theoretically they are not worth their face values until their maturity dates. Interest-bearing notes call for recognition of accrued interest on the balance sheet date. Accounts receivable are stated at the amounts collectible according to the terms of the sale.

Almost invariably some of the accounts receivable arising from sales will prove uncollectible. This makes it desirable, ordinarily, to anticipate the loss on accounts so that the loss may be related to the period of the sale and the asset arising from sales may be stated at the amount considered recoverable. Recognition of the probable loss on collections, as explained in an earlier chapter, is accomplished by a charge to Loss from Bad Debts and a credit to Allowance for Bad Debts. The loss is reported as a selling, general and administrative, or financial charge, depending upon the division that is held responsible for controlling such losses. The allowance is reported as a subtraction from accounts receivable. When positive evidence is available concerning the worthlessness of an account, the loss is recorded by a charge to the allowance and a credit to the receivable.

### **BASES FOR ESTIMATE OF BAD DEBT LOSSES**

The estimate for bad debt losses may be based upon (1) the amount of sales or (2) the amount of receivables. When sales are used as the basis for calculation, the problem of estimating losses is viewed as one involving primarily the accurate measurement of income. Basing the adjustment on receivables considers the problem from the point of view of proper asset valuation. With recent emphasis upon profit and loss measurement, increasing support has developed for periodic charges based upon sales. A description of the methods employed under each of these bases is described in the paragraphs that follow.

**BAD DEBTS ADJUSTMENT BASED ON SALES**

Bad debt losses of recent periods are related to corresponding sales in developing a percentage of losses to sales. This percentage may be modified by expectations in the light of current experience. Since bad debts occur only on credit sales, it would seem logical to develop a percentage of losses to charge sales of the past. This would be applied to charge sales of the current period. However, since extra work may be required in maintaining records of cash and credit sales or in analyzing sales data, the percentage is frequently developed in terms of sales totals. Unless there is considerable fluctuation in the proportion of cash and credit sales periodically, the total sales method will give fairly comparable results. The sales percentage method for anticipating losses is widely used in practice because of its soundness in theory and simplicity in application.

**BAD DEBTS ADJUSTMENT BASED ON RECEIVABLES**

There are three methods of establishing and maintaining an allowance for bad debts when receivables are used as the base for the adjustment:

- (1) The allowance is raised to a certain percentage of receivables.
- (2) The allowance is increased by a certain percentage of receivables.
- (3) The allowance is raised to an amount determined by analyzing the accounts.

*Raising Allowance to a Certain Percentage of Receivables.* This method calls for relating the bad debts experience of recent periods to accounts outstanding in such periods, together with a consideration of special current conditions. An estimate of the probable losses to be suffered in the realization of receivables on hand is developed in terms of this information. Loss from Bad Debts is charged and Allowance for Bad Debts is credited for an amount that will bring the allowance to the desired balance. To illustrate, assume receivables of \$60,000 at the end of a period, a credit balance of \$200 in the allowance account carried over from prior periods, and an estimated bad debt loss factor of 2% of accounts receivable. The allowance in this case should be stated at \$1,200. The following entry brings the allowance to the desired amount:

Loss from Bad Debts	.	1,000	
Allowance for Bad Debts	.		1,000

This method is simple in application; however, while it offers a satisfactory approach to the measurement of receivables, it may fail to provide equitable periodic charges to revenue. This is particularly

true in view of the irregular determinations of bad debt losses as well as the lag in their recognition. After the first year, periodic bad debt provisions are directly affected by the current reductions in the allowance resulting from a recognition of bad accounts originating in prior periods.

*Increasing Allowance by a Certain Percentage of Receivables.* This method also calls for the development of a rate after appropriate analysis of loss experience. The accepted rate is then applied to the balance of accounts receivable on hand in arriving at the charge for bad debts and allowance increase. This method, too, is a simple one to apply, and it is not subject to the shortcomings of the previous method; but the application of this method results in recurring charges for those accounts on hand at the end of successive periods unless the account balances are analyzed and appropriate adjustment is made to avoid a duplication of loss provisions. This factor must be considered, particularly when interim statements are prepared.

*Raising Allowance to an Amount Determined by Analyzing the Accounts.* Perhaps the most satisfactory of the methods wherein receivables are used as the adjustment base is the one commonly called *aging receivables*. Past-due accounts are first removed from current accounts and are shown in a separate ledger group of accounts. Past-due accounts may now be classified in terms of age. In classifying accounts, past-due accounts are simply listed on an analysis sheet and carried across into a series of columns showing the period past due for each item. An illustration of such an analysis is shown below:

#### PARKER AND POPE

##### ANALYSIS OF PAST-DUE RECEIVABLES — DECEMBER 31, 1953

CUSTOMER	AMOUNT	NOT MORE THAN 30 DAYS PAST DUE	31-60 DAYS PAST DUE	61-90 DAYS PAST DUE	91-180 DAYS PAST DUE	181-365 DAYS PAST DUE	MORE THAN 1 YEAR PAST DUE
A. B. Andrews	450		450				
B. T. Brooks	300			100	200		
B. Bryant	200	200					
L. B. Devine	100	100					
K. Flood	200						200
M. A. Young	400	100		300			
Total	7,550	3,000	1,200	650	500	800	1,400

It is now desirable to review each overdue balance with some appropriate company official and to arrive at estimates concerning the degree of collectibility of each item listed. An alternative procedure is

to develop a series of estimated loss percentages and to apply these to the different past-due classifications. The calculation of the allowance on the latter basis is illustrated below:

PARKER AND POPE

ESTIMATED AMOUNT OF UNCOLLECTIBLE ACCOUNTS — DECEMBER 31, 1953

CLASSIFICATION	BALANCE FROM ANALYSIS SHEET	BAD DEBT EXPERIENCE PERCENTAGE	ESTIMATED AMOUNT OF UNCOLLECTIBLES
Not over 30 days past due	\$3,000	5%	\$ 150
31 60 days past due	1,200	10%	120
61 90 days past due	650	20%	130
91 180 days past due	500	30%	150
181 365 days past due	800	50%	400
More than one year past due	1,400	80%	1,120
	\$7,550		\$2,070

Loss from Bad Debts is now debited and Allowance for Bad Debts is credited for an amount that will bring the allowance account up to the required balance. Assuming that the allowance account shows a credit balance of \$620 before adjustment and a loss of \$2,070 is indicated as shown in the tabulation, the following entry is made to raise the allowance to the required amount:

Loss from Bad Debts	1,450	
Allowance for Bad Debts		1,450

The aging method may require considerable time and may prove expensive when a great many accounts are involved. The method still involves estimates, and the added refinement that may be considered to be added by the aging process may not warrant the additional effort. It should be pointed out, too, that the adoption of the asset valuation approach, here as in the other instances, may fail to provide equitable periodic charges to profit and loss, since charges to profit and loss are not coordinated with the time of sales activity but are made when there is a recognizable impairment of asset values.

**CORRECTIONS IN ALLOWANCE FOR BAD DEBTS**

As indicated in the previous paragraphs, the allowance for bad debts balance is established and maintained by means of adjusting entries at the close of each accounting period. If the allowance provisions are too large, the allowance account balance will be unnecessarily inflated and profits will be understated; if the allowance provisions are too small, the allowance account balance will be inadequate and profits will be overstated. Care must be taken to see that the account balance

*follows the credit experience of the particular business. The process of aging receivables may be employed as a means of checking the allowance balance at different intervals to be certain that it is being maintained satisfactorily. Such periodic checks may suggest a change in the rate to be applied or a change in method.*

When it appears that an allowance balance is clearly inadequate or excessive as a result of failure to estimate losses satisfactorily in prior periods, a correcting entry is in order. When correction of a material amount to the allowance account is involved, the corresponding charge or credit should be made (1) to a special account disclosing the correction in profits of prior periods when this information is to be reflected as an extraordinary item on the income statement, or (2) to Earned Surplus when corrections are shown on the latter report. The recognition of current period receivables as bad debt losses by charges to the allowance may result in a debit balance in the allowance account. A debit balance arising in this manner does not prove that the allowance is inadequate. Here charges to the allowance may simply predate the current loss provision, and the adjustment at the end of the period should cover losses already determined as well as those yet to be recognized.

Occasionally, accounts that have been charged off as worthless are unexpectedly collected. The original entry whereby the customer's account was written off against the allowance may be reversed, inasmuch as the receipt of the payment shows that entry to have been in error. The receipt of cash is then recorded in the usual manner.

**BAD DEBTS RECOGNITION AT TIME OF LOSS** In the case of many small businesses and in certain instances where estimated losses on accounts receivable cannot be reliably determined, no provision is made at the end of the period in anticipation of bad debt losses. Instead, bad debt losses are recognized in the periods in which the accounts are determined to be uncollectible. When bad debts are not anticipated by the establishment of an allowance, accounts found to be bad are written off by a charge to Loss from Bad Debts and a credit to the customer's account. If an account written off is unexpectedly recovered in the same period, the entry to record the loss may be reversed and the collection recorded in the usual manner. If recovery is made in a subsequent period, it is necessary to charge the receivable account and credit Recoveries of Accounts Written Off in Prior Periods; the collection of the receivable is then recorded in the usual manner. The balance of the account Recoveries of Accounts Written Off in

Prior Periods may be reported as a subtraction from Loss from Bad Debts in arriving at the net charge for bad debts made currently.

While theory supports the anticipation of uncollectibles so that revenue may carry its full burden of expenses, the identification of the charge with the period of its discovery is frequently practiced because of its convenience in application. It has already been suggested that both the method of anticipating losses by the allowance procedure and the method of recognizing losses only when determined are acceptable for income tax purposes. The method adopted, however, must be employed consistently on successive tax returns. The two methods are compared below:

Transaction	Entry	
	Assuming that bad debts are charged to an allowance account set up in anticipation of such losses	Assuming that bad debts are charged to operations in the period in which the losses are determined
To increase allowance for bad debts at the end of the period.	Loss from Bad Debts 1,200 Allowance for Bad Debts 1,200	
To write off customers' accounts assumed to be worthless.	Allowance for Bad Debts 850 Accounts Receivable 850	Loss from Bad Debts 850 Accounts Receivable 850
To restore customer's account previously written off but now determined to be collectible,		
(a) assuming determination is made in period of write-off.	Accounts Receivable 100 Allowance for Bad Debts 100	Accounts Receivable 100 Loss from Bad Debts 100
(b) assuming determination is made in subsequent period.	Accounts Receivable 100 Allowance for Bad Debts 100	Accounts Receivable 100 Recoveries of Accounts Written Off in Prior Periods 100
To record collection of customer's account.	Cash 100 Accounts Receivable 100	Cash 100 Accounts Receivable 100

#### ANTICIPATION OF DISCOUNTS AND OTHER CHARGES IN VALUATION OF RECEIVABLES

While the foregoing discussion has been restricted to the concepts governing the provision for uncollectible items, the anticipation of other charges to be absorbed in the realization of accounts receivable and hence properly matched against current revenue may be suggested by conditions of sales and collections.

For example, if customers generally take cash discounts in making remittance, it may be argued that reporting receivables and income in terms of customer billings involves some overstatement of these items. Under such circumstances, it may be desirable to anticipate discounts by a charge to Sales Discounts and a credit to Allowance for Sales Discounts. Allowance for Sales Discounts would be subtracted from Accounts Receivable so that the accounts would be reflected at their estimated cash realizable value. Instead of charging discounts on the collection of old accounts to the allowance in the new period, it would be more convenient to transfer the allowance to the sales discounts account by a reversing entry, the credit to Sales Discounts thus serving to absorb that portion of sales discounts already charged against profits of the prior period.

Similar recognition may be suggested for probable allowances yet to be made on sales and for probable losses on sales returns represented by the difference between charges to customers and the values applicable to goods returned. Claims that customers may be entitled to make for freight charges that they pay on the receipt of goods or on the return of goods may call for consideration. Future costs of billing, collection activities, and attorneys' efforts involved in the realization of accounts may likewise warrant consideration. It may be pointed out that the refinement in measurement available through the establishment of allowances for the classes of items just mentioned is seldom found in practice. When allowances are not established and the volume of activities and experiences with respect to such charges does not vary materially from period to period, the recognition of such charges in the period in which they are finally determined will have little effect upon periodic profit and loss, although asset balances may include some minor degree of overstatement.

The preceding discussion has considered the anticipations of charges as relating to the realization of accounts receivable. The realization of notes receivable may involve similar charges. When sales are used as a basis for estimating future charges, allowances may be considered applicable to both accounts receivable and notes received in liquidation of accounts. When accounts receivable are analyzed and used as a base for developing related allowances, notes receivable would require similar analysis in the development of allowances to absorb charges involved in the realization of this asset.

#### **USE OF RECEIVABLES FOR PROCUREMENT OF CASH**

A business frequently requires cash for current purposes in excess of the amount on hand and the amount to become available

in the normal course of operations. The business may borrow cash by the issuance of notes or other forms of indebtedness on a secured or an unsecured basis, or it may use accounts receivable or notes receivable as a basis for a cash advance from a bank or a finance company. The latter procedures are described in the remaining pages of this chapter.

**ASSIGNMENT OF ACCOUNTS RECEIVABLE** In order to obtain immediate cash, accounts receivable owned by the business may be (1) pledged, (2) assigned, or (3) sold.

*Pledge of Accounts Receivable.* Advances are frequently obtained from banks or other lending institutions by pledging accounts receivable as security on the loan. Ordinarily, collections are made by the borrower, who is required to use this cash in meeting his obligation to the lender. The lender, in such instances, may be given access to the borrower's records to determine whether remittances are being properly made on pledged accounts.

*Assignment of Accounts Receivable.* Certain finance companies advance cash upon the assignment to them of a given amount of accounts receivable. Such assignments carry a guarantee on the part of the assignor that he will make up any deficiency in the event the accounts fail to realize the agreed amount. Assignments thus represent, in effect, sale of accounts on a recourse basis. The total of accounts assigned normally exceeds the cash advanced by an amount considered adequate to cover uncollectible items, returns, offsets, and amounts subject to dispute. When amounts actually recovered on assigned accounts exceed the sum of the advance and the finance company's charges, such excess accrues to the assignor. Charges made by the finance company usually consist of a service charge based upon the face amount of the receivables plus interest upon the actual unrecovered balance computed on a daily basis. Collections on the accounts receivable are normally made by the borrower, who turns the cash over to the assignee, although there are instances where collections are made by the finance company.

*Sale of Accounts Receivable.* Certain persons or finance companies purchase accounts receivable outright on a "without recourse" basis. This is known as accounts receivable *factoring*, and the purchaser is referred to as a *factor*. Customers are notified that their bills are payable to the factor, and this party assumes the burden of billing and collecting accounts. Because of the added risk borne by the factor, as well as the bookkeeping and other collection routines that he assumes,

the charge made here exceeds the interest charge involved in borrowing cash from a bank or the service and interest charges involved in the assignment process.

*Accounting Procedures for Accounts Receivable Financing.* No special accounting problems are encountered in the pledge or the sale of receivables. When receivables are pledged, the books simply report the loan and the subsequent settlement. Disclosure should be made on the balance sheet of the receivables pledged to secure the obligation to the lending agency.

When receivables are sold outright, Cash is debited, receivables and related allowance balances are closed, and an expense balance is charged for factoring costs. No further entries are required.

The assignment of accounts calls for special accounting procedures. Although the assignment of accounts receivable is comparable to the discounting of customers' notes from a legal point of view and similar accounting may be employed, it is simpler practice to treat the relationship with the finance company as a loan secured by specific assets that will be used to liquidate the loan. Two entries are made at the time the advance is received and the accounts receivable are assigned: one entry records the obligation to the finance company for the advance and the flat charge; the second entry sets apart under separate control those accounts whose proceeds will be applied to payment of the loan.

To illustrate accounting for the assignment of accounts receivable following the procedure just explained, assume that the Masters Company on March 1 assigns accounts receivable of \$24,000 to the Jones Finance Corporation and receives \$19,500 in cash, a service charge of \$500 being made for the advance. The entries on the books of the Masters Company are:

Transaction	Entry on Borrower's Books		
Mar. 1 Assigned accounts receivable of \$24,000 to Jones Finance Corp., receiving \$19,500 representing \$20,000 less a charge of 2½% on the advance.	Accounts Receivable Assigned	24,000	
	Accounts Receivable		24,000
	Cash	19,500	
	Assignment Expense	500	
	Jones Finance Corp		20,000
Mar. 31 Collections for March, \$15,000. Remitted this amount to finance company to apply on advance together with interest at 6% for one month on this amount.	Cash	15,000	
	Accounts Receivable Assigned		15,000
	Jones Finance Corp	15,000	
	Interest Expense	75	
	Cash		15,075

Transaction	Entry on Borrower's Books	
Apr. 30 Collections for April, \$7,500.	Cash	7,500
Remitted balance owed to finance company, \$5,000, together with interest at 6% for two months on this amount.	Accounts Receivable Assigned ..	7,500
	Jones Finance Corp	5,000
	Interest Expense	50
	Cash	5,050
Returned remaining assigned accounts to unassigned accounts control.	Accounts Receivable	1,500
	Accounts Receivable Assigned .	1,500

If a balance sheet is prepared before the finance company has received full payment, the total of accounts assigned less the portion required to cover the claim of the finance company is reported as an asset. A statement is also made concerning the contingent liability on the part of the company to meet the obligation in the event that assigned accounts do not realize enough to liquidate the loan. To illustrate, if in the preceding example a balance sheet is prepared on March 31, accounts receivable and information relating to assigned accounts may be reported as follows:

Current assets:

Accounts receivable		\$50,000
Company's interest in assigned accounts receivable:		
Assigned accounts	\$9,000	
Less interest of Jones Finance Corp. in assigned accounts (company is contingently liable as guarantors of assigned accounts)	5,000	4,000
Total accounts receivable		\$54,000

When collections are made by the finance company, a procedure similar to that illustrated can still be employed. In such instances, however, entries are made when information is received from the finance company concerning collections, interest charges, and the return of accounts in excess of claims.

A business may resort to accounts receivable financing as a temporary and emergency matter after exhausting the limited line of unsecured credit that may be available from a lending institution. On the other hand, many companies may engage in such financing as a continuing policy of accounts receivable conversion into immediate cash.

### DISCOUNTING

#### CUSTOMERS' NOTES

Cash may be obtained by having customers' notes discounted by the bank or some other agency willing to accept such instruments. If a customer's note is non-interest-bearing, credit is received for the face value of the note

less a charge for interest, known as *discount*, for the period from the date the note is discounted to the date of its maturity. If the note is interest-bearing, the maturity value of the note is first determined. The amount that is paid for the note is the maturity value of the note less discount calculated on this maturity value from the date the note is discounted to its maturity. In calculating the interest charge for short-term notes, it is the usual practice to use the exact number of days from the date of discount to the due date of the note.

To illustrate, assume that a customer's \$1,000, 2-month note dated December 1 is discounted on December 11 at 6%. In figuring time, the wording on the note is followed. The above note is due two months hence, or on February 1. If it were a 60-day note, it would be due on January 30 (30 days remaining in December and 30 days in January). The discount period is calculated as follows:

December 11 - 31.....	20 days
January.....	31 days
February 1 (due date).....	1 day
Total.....	52 days

Assuming that the note is non-interest-bearing, the cash proceeds on discounting the note are calculated as follows:

Maturity value of note.....	\$1,000.00
Discount on \$1,000 for 52 days at 6%.....	8.67
Discounted value of note.....	<u>\$ 991.33</u>

The following entry is made:

Cash.....	991.33	
Interest Expense.....	8.67	
Notes Receivable.....		1,000.00
Had customer's \$1,000 non-interest-bearing note discounted, 52 days at 6%.		

The discount of \$8.67 may be calculated as follows:

Principal x Rate x Time = Interest

$$\$1,000 \times \frac{6}{100} \times \frac{52}{360} = \$8.67$$

It should be observed that in interest calculations involving short-term notes, 360 days rather than 365 days are generally used as the equivalent of a year. When this is the case, the "6% method" may prove convenient in calculating interest. Inasmuch as the year is con-

sidered to consist of 360 days, interest at 6% for 60 days is one sixth of a full year's interest, or 1%. Interest at 6% for 30 days is one half of that for 60 days; interest for 6 days is one tenth of that for 60 days. By using such simple combinations, the interest at 6% on any amount can be readily determined. In discounting the note above, the discount is calculated by the use of this method as follows:

(a) Interest on \$1,000 for 60 days at 6% (.01 of principal).....	\$10.00	
(b) Less: interest on \$1,000 for 6 days at 6% (.001 of principal).....	\$1.00	
(c) interest on \$1,000 for 2 days at 6% ( $\frac{1}{3}$ of [b]).	.33	1.33
(d) Interest on \$1,000 for 52 days at 6%.....	\$ 8.67	

If the interest rate above were more or less than 6%, the interest at 6% can be computed first and then be increased or decreased according to the relationship that the given rate bears to the 6% base figure. For example, if the interest rate is 7%, the interest amount at 6% is multiplied by  $\frac{7}{6}$  or raised by  $\frac{1}{6}$ ; if the interest rate is 4%, the interest amount at 6% is multiplied by  $\frac{4}{6}$  or reduced by  $\frac{1}{3}$ .

It was assumed in the example above that the discounted note was non-interest-bearing and therefore had a maturity value of \$1,000. If the note provides for payment of principal plus interest at 6% at maturity, and it is discounted at 6%, determination of the cash proceeds is as follows:

Principal of note.....	\$1,000.00
Interest to maturity (60 days at 6%).....	10.00
Maturity value of note .....	\$1,010.00
Discount on \$1,010 for 52 days at 6% .....	8.75
Discounted value of note .....	\$1,001.25

If the note had been held until maturity, interest of \$10 would have been earned. By having the note discounted prior to maturity, the net gain amounted to only \$1.25. This amount is recorded as income as follows:

Cash.....	1,001.25	
Notes Receivable.....		1,000.00
Interest Income.....		1.25

When a person endorses a note "without recourse," he is relieved of any liability on the inability of the maker of the note or any prior endorser to make settlement of the note upon its maturity. When he

endorses a note without making any qualification, however, he becomes liable to subsequent holders of the note for its full payment in the event the note is not paid at maturity. An endorser who is held liable on an instrument has the right to recover such payment from the maker of the note who failed to comply with its terms.

Normally, endorsement without qualification is required in discounting a note, and the endorser becomes contingently liable on the paper. The possibility that the endorser will be obliged to make payment on a note that is discounted may be indicated in the accounts by a credit to Notes Receivable Discounted instead of Notes Receivable at the time the note is discounted. Notes Receivable Discounted then reports the contingent liability arising through the note transfer; Notes Receivable remains open pending final settlement of the obligation. If in the previous example the endorser of the note is contingently liable on it and it is considered desirable to show that final disposition of the note has not been made, the following entry is made:

Cash	1,001 25	
Notes Receivable Discounted		1,000 00
Interest Income		1 25

When the person who holds the note at maturity receives payment from the maker, the contingent liability on the part of an endorsee is ended and the following entry is made:

Notes Receivable Discounted	1,000 00	
Notes Receivable		1,000 00

Notes Receivable can be reported as an asset and Notes Receivable Discounted as a liability on the balance sheet; however, when one assumes that liability on discounted notes is rather remote, Notes Receivable Discounted is more appropriately reported as a subtraction from Notes Receivable. This procedure serves to reduce notes to the balance actually held while at the same time showing the contingent liability arising from the transfer of notes.

The use of the notes receivable discounted account gives the same final result as that obtained when Notes Receivable is credited for each note that is discounted. Since data concerning the contingent liability are of concern only on the balance sheet date and these can be determined readily at the end of the period from an examination of the detailed record of notes transferred, the extra work involved in maintaining a notes receivable discounted account may not be warranted. When the notes receivable discounted account is not used, information concerning the contingent liability can be provided on the balance sheet

by means of a parenthetical remark, a footnote, an accompanying note, or a statement under a separate contingent liabilities heading.

If a note is not paid when it is due, the holder of the note must give the endorser prompt notice of such dishonor. The endorser is then required to make payment to the holder. Payment consists of the face value of the note plus interest and plus any fees and costs relating to collection. The full amount paid is recoverable from the maker of the note, and a receivable account with the maker should be charged for the payment. Sometimes the charge is made to Notes Receivable Dishonored or to Past-Due Notes. Such an account summarizes amounts paid by the endorser and recoverable from the parties who are liable on the instruments. If Notes Receivable Discounted was credited at the time the note was discounted, this account, together with the original notes receivable account, should be canceled by a debit to Notes Receivable Discounted and a credit to Notes Receivable.

Assuming that collection of the claim on the dishonored note plus additional interest for the overdue period is made at a later date, Cash is debited and the maker's account and Interest Income are credited. Interest for the overdue period is figured at the legal rate as required by the laws of the particular state. If part or all of the debtor's balance proves uncollectible, the unpaid balance is written off as a loss or a charge against an allowance, whichever is appropriate.

Two sets of illustrations will be offered: (1) discounting a customer's non-interest-bearing note, and (2) discounting a customer's interest-bearing note.

(1) Assume that J. P. Phillips gives S. R. Turner a \$1,000, 2-month, non-interest-bearing note dated December 1 in payment of an account. The note is discounted by Turner on December 11 at 6%, and the contingent liability is recorded. Also assume that (a) Phillips pays the note at maturity and (b) he fails to pay the note until 90 days after it is due, but that he does pay it at that time with interest and protest fees. The transactions would be recorded as shown on the upper parts of pages 198 and 199.

(2) Assume that the note given Turner by Phillips is a 2-month, 6% note. Also assume that (a) Phillips pays the note at maturity and (b) he fails to pay the note until 90 days after it is due. Entries would be made as shown in the illustration on the lower part of pages 198 and 199 and on pages 200 and 201.

*Illustration 1. Discounting a customer's non-interest-bearing note:*

Transactions	Entries on Books of Phillips, the Customer
December 1: Issuance of 2-month, non-interest-bearing note.	Accounts Payable — S.R. Turner . . . . . 1,000.00 Notes Payable . . . . . 1,000.00
December 11: Note discounted for 52 days at 6%.	
December 31: Adjustment at end of annual fiscal period to record deferred interest for 32 days.	
January 1: Reversing entry.	
(a) Assuming that the note is paid by Phillips at maturity:	
February 1: Payment of note.	Notes Payable . . . . . 1,000.00 Cash . . . . . 1,000.00
(b) Assuming that the note is not paid by Phillips at maturity: Turner pays the note and collects from Phillips 90 days after due date with interest at 6%, the legal rate.	
February 1: Failure to pay by maker; payment of note by endorser with protest fee, \$2.	
May 2: Payment by maker of note, including protest fee and interest on \$1,000 for overdue period at 6%.	Notes Payable . . . . . 1,000.00 Interest Expense . . . . . 15.00 Miscellaneous Expense . . . . . 2.00 Cash . . . . . 1,017.00

*Illustration 2. Discounting a customer's interest-bearing note:*

Transactions	Entries on Books of Phillips, the Customer
December 1: Issuance of 2-month, 6% note.	Accounts Payable — S. R. Turner . . . . . 1,000.00 Notes Payable . . . . . 1,000.00
December 11: Note discounted for 52 days at 6%.	

Entries on Books of Turner, the Seller	Entries on Books of Party Dis- counting Note
Notes Receivable . . . 1,000.00 Accounts Receiv- able — J.P.Phillips 1,000 00	
Cash . . . . . 991.33 Interest Expense . . . 8.67 Notes Receivable Discounted . . . . . 1,000.00	Notes Receivable . . . 1,000.00 Cash . . . . . 991.33 Interest Income . . . 8.67
Deferred Interest Expense . . . . . 5 33 Interest Expense 5 33	Interest Income . . . 5.33 Unearned Interest Income . . . . . 5.33
Interest Expense . . . 5.33 Deferred Interest Expense . . . . . 5 33	Unearned Interest Income . . . . . 5 33 Interest Income . . . 5.33
Notes Receivable Discounted . . . . . 1,000 00 Notes Receivable 1,000 00	Cash . . . . . 1,000.00 Notes Receivable 1,000.00
Accounts Receiv- able — J. P. Phillips 1,002.00 Cash . . . . . 1,002.00 Notes Receivable Discounted . . . . . 1,000.00 Notes Receivable 1,000.00	Cash . . . . . 1,002.00 Notes Receivable . . . 1,000.00 Protest Fees . . . . . 2.00
Cash . . . . . 1,017.00 Accounts Re- ceivable — J. P. Phillips . . . . . 1,002 00 Interest Income . . . 15.00	

Entries on Books of Turner, the Seller	Entries on Books of Party Dis- counting Note
Notes Receivable . . . 1,000.00 Accounts Receiv- able — J. P. Phillips . . . . . 1,000 00	
Cash . . . . . 1,001.25 Notes Receivable Discounted . . . . . 1,000 00 Interest Income 1 25	Notes Receivable . . . 1,000.00 Interest Income . . . 1.25 Cash . . . . . 1,001.25

Transactions	Entries on Books of Phillips, the Customer		
December 31: Adjustment at end of annual fiscal period to record accrued interest for 30 days.	Interest Expense	5 00	
	Accrued Interest on Notes Pay- able		5 00
January 1: Reversing entry.	Accrued Interest on Notes Payable	5 00	
	Interest Expense		5 00
(a) Assuming that the note is paid by Phillips at maturity:			
February 1: Payment of note and interest for two months.	Notes Payable	1,000 00	
	Interest Expense	10 00	
	Cash		1,010 00
(b) Assuming that the note is not paid by Phillips at maturity. Turner pays the note and collects from Phillips 90 days after due date with interest at 6%, the legal rate.			
February 1: Failure to pay by maker; payment of note by endorser including interest, \$10, and protest fee, \$2.			
May 2: Payment by maker of note, including interest, protest fee, and interest on \$1,000 for overdue period at 6%.	Notes Payable	1,000 00	
	Interest Expense	25 00	
	Miscellaneous Expense	2 00	
	Cash		1,027 00

### PRESENTATION OF RECEIVABLES ON THE BALANCE SHEET

Normally the receivables that qualify as current items are grouped for presentation in the following classes: (1) notes—trade debtors, (2) accounts—trade debtors, (3) accrued receivables, and (4) other receivables. Reporting should disclose notes that are nonnegotiable. The detail reported for accrued and other receivables depends upon the relative significance of the various items included. Valuation allowance accounts are deducted from the individual receivable balance or combined balances to which they relate. Notes receivable may be reported gross with notes receivable discounted shown as a reduction from this balance, or notes may be reported net with the contingent liability being separately mentioned. Accounts receivable assigned may be reported gross with the interest of the assignee in such accounts shown as a subtraction item, or the company's interest in receivables may be reported net with appropriate reference to the contingent lia-

Entries on the Books of Turner, the Seller		Entries on Books of Party Discounting Note	
		Accrued Interest on Notes Receivable . . . . .	5 00
		Interest Income . . . . .	5 00
		Interest Income . . . . .	5 00
		Accrued Interest on Notes Receiv- able . . . . .	5 00
Notes Receivable Discounted . . . . .	1,000.00	Cash . . . . .	1,010 00
Notes Receivable . . . . .	1,000.00	Notes Receivable . . . . .	1,000 00
		Interest Income . . . . .	10 00
Accounts Receiv- able — J. P. Phillips . . . . .	1,012 00	Cash . . . . .	1,012 00
Cash . . . . .	1,012 00	Notes Receivable . . . . .	1,000 00
Notes Receivable Discounted . . . . .	1,000 00	Interest Income . . . . .	10 00
Notes Receivable . . . . .	1,000 00	Protest Fees . . . . .	2 00
Cash . . . . .	1,027 00		
Accounts Receiv- able — J.P. Phillips . . . . .	1,012 00		
Interest Income . . . . .	15 00		

bility involved. When receivables have been mortgaged, pledged, or otherwise hypothecated, this should be fully disclosed, together with reference to the obligation that is thus secured.

Current receivable items as they might appear on the balance sheet are shown below:

Receivables:	
Trade notes and drafts receivable (notes of \$20,000 have been pledged to secure bank borrowing)	\$ 38,000
Trade accounts receivable (including installment payments not due for 12-18 months of approximately \$30,000) . . . . .	\$112,000
Less: Allowance for losses on repossessions and bad debts . . . . .	3,500
Accrued receivables . . . . .	4,500
Miscellaneous notes and accounts, including term loans to employees of \$6,500 . . . . .	12,000
Total receivables . . . . .	\$164,000

## QUESTIONS

**1. The balance sheet for the Waring Co. shows:**

Notes receivable . . . . .	\$150,000	
Accounts receivable . . . . .	300,000	
	\$450,000	
Less: Allowances . . . . .	120,000	\$330,000

What comments would you make on this presentation?

**2.** The Proctor Corporation shows on its balance sheet one receivable balance that includes the following items: (a) advances to officers, (b) deposits on machinery and equipment being produced by various companies for the Proctor Corporation, (c) traveling expense advances to salesmen, (d) damage claims against transportation companies approved by such companies, (e) estimated federal income tax refunds, (f) accrued interest on notes receivable, (g) United States Treasury Notes, (h) overdue notes, (i) receivables from a foreign subsidiary company, (j) subscriptions receivable on a new bond issue, (k) customer container deposits, and (l) creditor overpayments. Suggest the proper treatment of each item.

**3.** The Workman Co. includes installment receivables not maturing within one year among its current trade receivables; the Williams Co. reports similar installment receivables under a separate title outside of the current asset group. Which procedure would you support?

**4.** The Burton Corporation summarizes amounts due from affiliates, officers, and employees as a result of sales and loans, etc., under a single heading under current assets. Comment on this practice.

**5.** Soon after C. & R., Inc. had mailed statements to customers on the first of the month, three complaints were received stating that credit had not been given for checks mailed at least a week before the end of the previous month. Upon investigating the complaints, the proper credits were found to have been made to the customers' accounts as of the second and third of the month. Is there need for any further investigation?

**6.** The Beller Co. includes in its current receivable total an investment in a joint venture with the Carter Corporation. Officials of the Beller Co. justify this practice on the grounds that the assets of the joint venture are all in current form. Comment on this practice.

**7.** (a) Give several examples of items that might qualify for disclosure as contingent assets. (b) What entry would you make in each case, assuming these items finally materialize as assets of value to the business?

**8.** The Baker Manufacturing Co. ships merchandise on a consignment basis to customers, title to such goods passing only at the time the goods are sold by the consignees. The Baker Manufacturing Co. charges accounts receivable for the cost of the goods shipped until sales are reported, when it increases the receivable accounts with the consignee to the regular billing price. Goods on consignment appear on the balance sheet as receivables. (a) Would you approve such practice? (b) Suggest an alternate procedure.

**9.** Suggest several methods for reporting income tax refund claims approved or under review and the circumstances supporting the appropriate use of each method.

**10.** An analysis of the accounts receivable balance of \$8,702 on the books of Burke, Inc. on December 31 reveals the following:

Accounts from sales of last three months (appear to be fully collectible).....	\$7,460
Accounts from sales prior to October 1 (of doubtful value).....	1,312
Accounts known to be worthless.....	320
Dishonored notes charged back to customers' accounts.....	800
Credit balances in customers' accounts.....	1,190

(a) What adjustments are required? (b) How should the various balances be shown on the balance sheet?

**11.** (a) Give four methods for the establishment and the maintenance of an allowance for bad debts. (b) What are the advantages and the disadvantages of each method? (c) Which do you feel is the preferable method?

**12.** The bookkeeper for Wells, Inc. believes he can show a more accurate valuation of notes and accounts receivable by aging the notes and accounts and establishing an allowance on this basis than he can by crediting the allowance account with a percentage of net sales on account. Do you agree? Give the advantages of each procedure.

**13.** Explain what procedure you would recommend in the development of comparative statements in a year in which a company changed its policy from recognition of losses in the period in which they are determinable to that of anticipation of losses by means of an allowance.

**14.** List and explain the nature of at least four deductions that may be applied under certain circumstances in the valuation of accounts receivable.

**15.** In what section of the income statement would you report (a) bad debts, (b) sales discounts, (c) recovery of accounts written off in prior periods?

**16.** (a) Distinguish between the practices of (1) pledging, (2) assigning, and (3) selling accounts receivable. (b) Describe the accounting procedure to be followed in each instance.

**17.** The Securities and Exchange Commission has rejected as deficient certain financial statements that failed to disclose pledges of certain receivables as security on loans. What reasons can you offer in support of such a rejection?

**18.** B. M. Lowell, who has been recording his contingent liability on notes receivable discounted, has noticed that he has been held liable on nearly as many customers' checks as he has on notes. He suggests setting up a "checks endorsed" account to show his contingent liability on checks. Is this advisable? Why?

**19.** Indicate several methods for presenting on the balance sheet data relating to (a) notes receivable discounted, and (b) accounts receivable assigned.

## EXERCISES

1. The accounts receivable controlling account for the Armour Co. shows a debit balance of \$34,550; the allowance for bad debts account shows a credit balance of \$600. Subsidiary ledger detail reveals the following:

Trade accounts receivable in 30 days . . . . .	\$12,000
Deferred payment accounts, receivable 1 month-18 months hence. . . . .	3,500
Trade receivables from officers . . . . .	1,250
Customers' accounts reporting credit balances arising from sales returns . . . . .	150
Advance payments to creditors on purchase orders . . . . .	3,000
Advance payments to creditors on orders for machinery . . . . .	5,000
Customers' accounts reporting credit balances arising from advance payments . . . . .	1,000
Accounts known to be worthless . . . . .	450
Accounts on which post-dated checks are held (no entries were made on receipt of checks) . . . . .	500
Advances to affiliated companies . . . . .	10,000

Show how this information would be reported on the balance sheet.

2. The trial balance before adjustment for the Moore Sales Co. shows the following balances:

	DR.	CR.
Accounts Receivable . . . . .	\$26,000	
Allowance for Bad Debts . . . . .	150	
Sales . . . . .		\$215,000
Sales Returns and Allowances . . . . .	1,000	

Give the adjustment for estimated bad debts, assuming:

- The allowance is maintained at 2% of accounts receivable.
- The allowance is to provide for losses of \$680 arrived at by aging accounts.
- The allowance is to be increased by  $1\frac{1}{2}$  of 1% of net sales.

3. The Barnett Co. decides to employ accounts receivable as a basis for financing. Its current position at this time is as follows:

Accounts Receivable . . . . .	\$30,000	Cash Overdraft . . . . .	\$ 750
Inventories . . . . .	45,000	Accounts Payable . . . . .	32,000

Prepare a statement of its current position, assuming that cash is obtained as indicated in each case below:

- Cash of \$20,000 is borrowed on short-term notes and \$18,500 is applied to the payment of creditors; accounts of \$25,000 are pledged to secure the loan.
- Cash of \$20,000 is advanced to the company by Wells Finance Co., the advance representing 75% of accounts assigned to it; assignment is made on a "with recourse" basis, and amounts collected in excess of the loan balance and charges accrue to the Barnett Co.
- Cash of \$20,000 is received on the sale of accounts receivable of \$22,500 on a "no recourse" basis.

4. Best Dealers, Inc. assigns accounts of \$80,000 to the Ace Finance Co. guaranteeing these accounts and receiving an 80% advance less a flat commission of 5% on the amount of the advance. Accounts of \$60,000

are collected and remittance is made to the finance company; the remaining accounts are written off against an allowance for bad accounts. Additional accounts of \$20,000 are assigned, and \$8,000 is collected on these accounts. Settlement is made with the finance company, including payment of \$1,200 for interest. What entries are required on the books of Best Dealers, Inc. to record the assignment and the subsequent transactions?

5. On September 15 each of the following notes is discounted by the bank at 6% for M. C. Felter. Give the cash proceeds on each note:

- (a) Felter's own 30-day, \$750 note.
- (b) Customer's 60-day, \$1,000, non-interest-bearing note dated August 15.
- (c) Customer's 60-day, \$1,500, 6% note dated August 31.
- (d) Customer's 90-day, \$1,276.20, 5% note dated September 10.
- (e) Customer's 90-day, \$1,512, 7½% note dated August 1.

6. Joe Burk received from John Carl a 60-day, 6% note for \$3,000, dated November 6, 1953. On December 6, Burk had Carl's note discounted at 6%, and recorded the contingent liability. The bank protested non-payment of the note and charged the endorser with protest fees of \$2.75 in addition to the amount of the note. On January 29, 1954, the note was collected with interest at 8% from the maturity date. What entries would appear on Burk's, Carl's, and the bank's books as a result of the foregoing?

## PROBLEMS

7-1. The balance sheet for the Norton Co. on December 31, 1952, shows the following current receivable balances:

Notes receivable including accrued interest of \$150	\$16,650	
Less: Notes receivable discounted	12,000	\$ 4,650
	-	
Accounts receivable	\$45,000	
Less: Allowance for bad debts	1,800	43,200
	-	

Transactions during 1953 included the following:

- (a) Sales on account were \$320,000.
- (b) Cash collected on accounts totaled \$212,000, which included accounts of \$46,500 on which cash discounts of 2% were allowed.
- (c) Notes received in payment of accounts totaled \$80,000.
- (d) Notes receivable discounted as of December 31, 1952, were paid at maturity with the exception of one \$2,500 note on which the company has to pay \$2,528, which included interest and protest fees. It is expected that recovery will be made on this note in 1954.
- (e) Customers' notes of \$50,000 were discounted during the year, proceeds from their sale being \$49,200. Of this total, \$36,000 matured during the year without notice of protest.
- (f) Customers' accounts of \$2,750 were written off during the year as worthless.
- (g) Recoveries of bad debts written off in prior years were \$350.
- (h) Notes receivable collected during the year totaled \$12,500 and interest collected was \$850.
- (i) On December 31, accrued interest on notes receivable is \$180.

- (j) *Aging the accounts on December 31, 1953, reveals the need for an allowance for bad debts of \$2,600.*
- (k) Cash of \$15,000 was borrowed from the bank, accounts receivable of \$20,000 being pledged on the loan. Collections of \$12,500 had been made on these receivables (included in the total given in transaction [b]) and this amount was applied on December 31, 1953, to payment of accrued interest on the loan of \$225, and the balance to partial payment of the loan.

*Instructions:* (1) Prepare journal entries summarizing the transactions and information given above.

(2) Prepare a summary of current receivables for balance sheet presentation.

**7-2.** The following post-closing trial balance is taken from the books of the Washburn Co. on December 31, 1953:

WASHBURN CO.  
POST-CLOSING TRIAL BALANCE  
DECEMBER 31, 1953

Cash . . . . .	\$ 7,485	
Marketable securities . . . . .	22,850	
Notes receivable . . . . .	24,000	
Accounts receivable, net . . . . .	41,000	
Merchandise inventory . . . . .	30,000	
Supplies . . . . .	900	
Equipment . . . . .	55,000	
Allowance for depreciation of equipment . . . . .		\$ 5,500
Buildings . . . . .	60,000	
Allowance for depreciation of buildings . . . . .		8,000
Land . . . . .	33,000	
Notes payable . . . . .		22,000
Accounts payable . . . . .		49,900
Capital stock . . . . .		150,000
Surplus . . . . .		38,835
	<hr/>	<hr/>
	\$274,235	\$274,235
	<hr/>	<hr/>

An examination of the composition of the cash account reveals the following:

Petty cash fund:

Cash . . . . .	\$ 40	
Expense vouchers . . . . .	180	
Postage stamps . . . . .	30	\$ 250

Cash on hand awaiting deposit . . . . .	1,035
Checking account with California Bank (overdrawn) . . . . .	(1,800)
Employees benefit fund with California Bank . . . . .	5,000
Deposit on merchandise ordered from Cole and Cole and to be completed by March 1, 1954 . . . . .	3,000
	<hr/>
	\$7,485

The following items are shown under marketable securities:

3% Marshall Co. Bonds (interest payable Mar. 1 and Sept. 1), \$3,000 face, purchased Nov. 1, 1953, at cost plus accrued interest for . . . . .	\$ 3,115
(Market value of these bonds on December 31, 1953, was \$3,120 and accrued interest.)	
Stock of the Glendale Mercantile Co. (purchased in order to secure a valuable long-term business contract) at cost . . . . .	10,000
(Market value of this stock on December 31, 1953, was \$10,000)	
Stock of Standard Motors, Inc., acquired as a temporary investment, at cost . . . . .	3,450
(Market value of this stock on December 31, 1953, was \$3,500)	
Cash surrender value of life insurance policies on the principal officers . . . . .	6,285
	<hr/>
	\$22,850

The notes receivable were as follows:

Notes receivable, customers . . . . .	\$15,200
Notes receivable, officers (current) . . . . .	4,600
Notes receivable from sale of equipment, due March 1 1955. . . . .	4,000
Accrued interest on notes . . . . .	200
	<hr/>
	\$24,000

Customers' notes of \$8,000 that were discounted have not yet matured. Notes Receivable was credited when the notes were discounted.

The following is a summary of the accounts receivable:

Customers' accounts . . . . .	\$33,500
Employees' accounts (current) . . . . .	6,000
Acknowledged claim for damages against Western Railroad . . . . .	1,500
Refundable federal income taxes of prior years (current) . . . . .	2,300
Cash advanced to salesmen for traveling expenses . . . . .	1,200
	<hr/>
	\$44,500
Less allowance for doubtful accounts . . . . .	3,500
	<hr/>
	\$41,000

The balance of the allowance for doubtful accounts is considered adequate.

*Instructions:* Prepare a balance sheet showing asset and liability items properly classified.

**7-3.** Weber, Inc. assigned \$60,000 in accounts to the Standard Finance Co. on March 1. Seventy-five per cent of this amount was advanced, less a 2% commission charged by the finance company. Interest on the amount

paid back is to be figured at 8%. The assignor continues to make collections on the accounts and makes monthly remittances of amounts collected.

Collections of \$33,500 were made in March, remittance being made on March 31 of collections and interest.

Collections of \$9,500 were made in April, remittance being made on April 30 of collections and interest.

Accounts of \$1,200 were written off against an allowance for bad debts in May, collections were made on the balance of accounts, and settlement was made with the finance company on May 30.

*Instructions:* Give the entries on the books of the assignor and the assignee to record the foregoing transactions.

**7-4.** The Town Shop assigns certain accounts receivable to the Wilson Finance Co. on the following basis: 80% is advanced, a charge of 5% being made on the amount advanced, and interest at 6% is charged on the amount owed; the finance company makes collections, the assignor guaranteeing all accounts. Transactions in March and April follow:

- Mar. 1. Received remittance upon the assignment of \$50,000 in accounts to the finance company.
- Mar. 31. Received notice that accounts of \$36,000 were collected and that \$130 was due for interest. Sent check to Wilson Finance Co. for interest charge.
- Apr. 30. Received check in settlement from finance company, together with a summary reporting that all accounts were collected with the exception of one from A. M. Anderson for \$650 that was being returned. In making settlement, the Wilson Finance Co. deducted \$60 as its charge for interest.

*Instructions:* Give the entries that would appear on the books of the Town Shop.

**7-5.** L. T. Wallace completes the following transactions, among others:

- Oct. 1. Received a \$2,500, 60-day, 6% note dated October 1 from Charles C. Kirk, a customer.
- 5. Had own \$2,500, 90-day note discounted at the bank at 6%.
- 20. Received a \$2,000, 60-day, non-interest-bearing note dated October 19 from R. A. Elwood, a customer.
- 31. Had Kirk's note discounted at the bank at 6%.
- Nov. 4. Had Elwood's note discounted at the bank at 6%.
- 12. Issued a \$1,400, 60-day, 7% note to A. L. Ross in payment of account.
- 18. Had own \$5,000, 60-day note discounted at the bank at 6%.
- 21. Received from R. F. Stone, a customer, a \$2,500, 90-day, 6% note dated November 1, payable to Stone and signed by the Gray Corporation. Upon endorsement, gave the customer credit for the maturity value of the note less discount at 7%.
- 25. Received a \$1,000, 60-day, 6% note dated November 24 from T. C. Travers, a customer.
- Dec. 1. Received notice from the bank that Kirk's note was not paid at maturity. Protest fees of \$2.50 were charged by the bank.
- 16. Received payment from Kirk on his dishonored note, including interest at 8% on the face value of the note from the maturity date.

*Instructions:* (1) Give the journal entries to record the above transactions, showing contingent liabilities in the accounts. (Show data used in calculations with each entry.)

(2) Give the adjusting entries that would be necessary on December 31 as a result of the foregoing.

(3) Indicate which adjusting entries should be reversed.

**7-6.** The following are some of the transactions completed by A. R. Medberry over a three-month period:

- Oct. 9. Had own \$5,000, 90-day note discounted at the bank at 6%.
10. Received from L. O. Gardner, a customer, a \$3,000, 60-day, 7% note dated October 9.
11. Received from C. A. Warren on account, \$2,500, 60-day, 7% note dated October 10.
18. Had Gardner's note discounted at the bank at 6%.
24. Issued a \$5,000, 90-day, 6% note dated October 24 to C. J. Cope in payment of account.
27. Had Warren's note discounted at the bank at 6%.
- Nov. 3. Received a \$650, 90-day, non-interest-bearing note dated November 1 from D. A. Eddy, crediting the customer's account at face value.
7. Had Eddy's note discounted at the bank at 6%.
28. Received from B. A. Norse, a customer, a \$300, 60-day, 6% note dated November 14 and made by the Ernest Company. Gave the customer credit for the maturity value of the note less discount at 6%.
29. Received a \$1,650, 15-day, 7% note dated November 29 from T. Rhodes, a customer.
- Dec. 10. Received notice from the bank that Gardner's note was not paid at maturity. Protest fees of \$2.50 were charged by the bank.
27. Received payment on Rhodes' note, including interest at 8%, the legal rate, on the face value from the maturity date.

*Instructions:* (1) Prepare the entries to record the above transactions showing the contingent liabilities in the accounts. (Show data used in calculations with each entry.)

(2) Give the necessary adjusting entries on December 31.

(3) Indicate which adjusting entries should be reversed.

**7-7.** On December 31, the A. L. Carroll Company has the following notes receivable on hand:

- (a) A 3,000, 90-day, 7% note of the Charles Company, dated October 10.
- (b) A \$2,500, 90-day, 6% note of the Harrison Corporation, dated October 14, that had been received on November 5 from R. R. Mills, a customer. Mills was credited for the maturity value of the note less discount at 7%.
- (c) A \$3,600, 2-month, non-interest-bearing note of the Miller Company, dated November 16. The customer was given credit for the face value of the note less discount at 7% on November 16.
- (d) A \$900, 90-day, 7% note of V. A. McCall, dated November 14, that had been received from W. A. Leeds, a customer. The customer was credited for the maturity value of the note less discount at 7%.

*Notes payable outstanding on December 31 were as follows:*

- (a) A \$10,000, 60-day, 6% note, dated November 4.
- (b) A \$5,000, 60-day, non-interest-bearing note that was discounted by the bank on December 8 at 6%.

*Instructions:* (1) Prepare the necessary adjusting entries as of December 31, giving an analysis of the adjustment totals in the explanation for each entry.

(2) Indicate which adjusting entries should be reversed.

7-8. You are given the following trial balances of The Becker Company. The trial balance as of December 31, 1953, was taken on a gross basis; that is, the totals of the debits and of the credits in each of the ledger accounts, including any balance from the post-closing trial balance at June 30, 1953, rather than the final balance, have been included. You are advised that the company records disbursements for expense items through liability accounts prior to making payment.

The books are not available. Since the trial balance is out of balance by \$270, shown as Unlocated Difference, you attempt to locate the probable source of this difference. You are told that Cash in Bank of \$28,044 has been verified.

### THE BECKER COMPANY

#### TRIAL BALANCES

ACCOUNT	JUNE 30, 1953	DECEMBER 31, 1953	
Cash in Bank . . . . .	\$ 21,849	\$ 275,016	\$ 246,972
Investments . . . . .	30,500	40,712	5,000
Accounts Receivable . . . . .	47,420	301,425	248,979
Merchandise Inventory . . . . .	55,542	208,856	153,495
Office Furniture & Fixtures . . . . .	8,663	11,164	635
Allowance for Depreciation . . . . .		\$ 4,967	176
Bank Loans . . . . .		30,000	10,000
Accounts Payable . . . . .		15,879	211,658
Accrued Income Tax . . . . .		7,350	5,658
Capital Stock . . . . .		50,000	
Earned Surplus . . . . .		55,778	10,000
Sales . . . . .			481
Cost of Sales . . . . .			151,914
Executive Salaries . . . . .			15,500
Other Administrative Expense . . . . .			21,567
Selling Expense . . . . .			25,348
Bad Debt Losses . . . . .			665
Writedown of Obsolete Merchandise . . . . .			1,025
Profit on Sale of Investment . . . . .			
Loss on Sale of Fixtures . . . . .			23
Interest Expense . . . . .			850
Income Tax Expense . . . . .			3,700
Unlocated Difference . . . . .			270
	<u>\$163,974</u>	<u>\$163,974</u>	<u>\$1,296,008</u>
			<u>\$1,296,008</u>

*Instructions:* Reconstruct the ledger accounts as they probably appear. Record the transactions for the period in journal form and in skeleton ledger accounts keyed to the journal entries. You need not prepare financial statements, but you should state where you think the error occurred in the books and give reasons to support your conclusion. (A.I.A.adapted)

7-9. Allen, a sole proprietor, intends to form a partnership with Benson. Because of Allen's failure to keep records, however, he cannot furnish to Benson statements indicative of financial position and earnings to serve as a basis for determining the respective capital interests of the prospective partners and for reaching agreement on other financial matters. Accordingly, it is agreed between Allen and Benson that Allen should continue operating as a sole proprietor for a six-month period ending May 31, 1954, and to keep proper accounting records to serve as a basis for the drafting of a satisfactory partnership agreement.

On December 10, 1953, you are engaged by Allen to establish a starting point in the bookkeeping retroactive to December 1. You ascertain the following facts with respect to balances on pertinent dates and transactions during the ten-day period:

(1) Available data as of December 1, 1953:

Cash:

Bank balance at Nov. 30, 1953, per bank statement	\$3,070
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Outstanding checks ascertained from checkbook:

No. 971	\$120
978	145
984	170
992	180

Furniture and fixtures (appraised value)	2,200
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Receivables (per billing slips):

Myers	800
Nolan	500
Peters	600

Payables (per monthly creditors' statements):

Carlson	350
Dent	620
Ferguson	820
Gates	100

(2) Transactions, December 1 to December 10:

(a) Sales on account:

To: Ryan, goods costing \$94 delivered Dec. 4	140
Quinn, goods costing \$178 delivered Dec. 7	250
Young, goods costing \$180 delivered Dec. 12	
(merchandise purchased from Ferguson	
below)	320

## (b) Purchases on account:

From: Carlson, goods ordered Dec. 1, received Dec. 2.....	400
Ferguson, goods ordered Dec. 2, received Dec. 5.....	192
Gates, goods ordered Dec. 4, received Dec. 8.....	300
Ivers, goods ordered Dec. 10, received Dec. 13.....	250

## (c) Cash receipts:

Dec. 2. Cash sales (cost, \$634) .....	860
5. Myers .....	400
7. Cash sales (cost, \$326) .....	485
9. Nolan .....	300
10. Peters .....	600*

## (d) Cash disbursements:

Dec. 2. Check No. 993, supplies .....	25
4. Check No. 994, December rent .....	175
5. Check No. 995, Dent .....	490**
9. Check No. 996, Ferguson .....	500
9. Check No. 997, withdrawal by Allen, proprietor .....	200

(e) Dec. 4. Receipt of credit memorandum for return of goods to Dent originally received on Nov. 28 and returned Nov. 30 ..	120
Dec. 9. Allowance on goods purchased by Nolan, Nov. 24 (error in pricing) .....	80

## (3) Balances, December 10, 1953:

## Cash:

Balance per bank statement, Dec. 10, 1953 .....	\$3,780
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## Outstanding checks:

No. 984 .....	\$170
996 .....	500

Merchandise inventory (per physical count stated at cost) .....	3,000
Furniture and fixtures .....	2,200

## Assume that:

- (1) Rent and supplies are fully chargeable to the Dec. 1-10 period.
- (2) The sale of merchandise to Young is to be recognized in the Dec. 1-10 period, although shipment is not made until Dec. 12.
- (3) Goods ordered from Ivers are not recognized as purchases until the merchandise is received.

*Instructions:* Prepare from the data given above a statement of net assets for Allen as of December 1 and December 10, 1953, and an income statement for the period, ended December 10, 1953. (A.I.A. adapted)

\*Deposited in bank, December 11, 1953.

\*\*After deduction of 2% cash discount.

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**Inventories**  
**Cost Procedures****NATURE OF INVENTORIES**

The term *inventories* is an asset designation for those goods that are held for sale in the normal course of business, as well as those goods that are being used or that will be used in producing goods to be made available for sale. Practically all tangible items fall into this classification at one time or another. Gasoline, oil, and automotive supplies are included in the inventory of a service station; crops and livestock are included in the inventory of a farmer; machinery and equipment are included in the inventory of a manufacturer producing such items for sale; buildings, ships, or dams under construction are included in the inventory of a contractor who is engaged to complete such projects. It is the sale of its inventories at more than cost of purchase or manufacture that normally provides a business with its chief source of revenue.

Inventories represent one of the most active elements in business operations, being continuously acquired, converted, and resold. A large part of a company's resources is frequently tied up with inventory procurement or manufacture. Inventory costs must be recorded, grouped, and summarized during the period. At the end of the period, an allocation of costs chargeable to current activities and to future activities must be made. Such allocation normally occupies a central role in the measurement of periodic operating results as well as in the determination of a business unit's financial condition. Appropriate cost allocation will result in reliable measurements of progress and condition. Failure to allocate costs properly can result in serious distortions of such measurements.

Accounting for inventory costs presents a number of serious problems. A great deal of thought has been directed by the accounting profession to these problems in recent years. This and the two chapters that follow consider the special problems relating to inventories.

**COMPOSITION OF INVENTORIES**

The term *inventories* applies to all goods that will ultimately be sold. The term *merchandise inventory* is normally applied to goods held by a trading concern, either wholesale or retail, when such goods have been acquired in a

condition for resale. The terms *raw materials*, *goods in process* or *work in process*, and *finished goods* are used to refer to the inventories held by a manufacturing concern. These latter items require description.

*Raw Materials.* Raw materials are those tangible goods that are used in the productive process. The raw materials of one company normally represent the finished products of the companies from which they were purchased. For example, newsprint is a raw material used in the publication of a newspaper, but it is the finished product of the paper mill from which it was purchased. Exceptions, however, are found in those instances where companies acquire their raw materials from natural sources.

While the term *raw materials* can be used broadly to cover all of the materials used in manufacturing, this designation is frequently restricted to materials that are directly related to the products being manufactured. The term *factory supplies* or *manufacturing supplies* is then used to refer to auxiliary materials, that is, materials that while necessary to the productive process are not directly identified with products. Oils, fuels, cleaning materials, etc., would fall into this grouping since these items are not incorporated in a product but simply facilitate production as a whole; paints, nails, bolts, etc., while physically embodied in the final product, are normally of such minor significance as to warrant inclusion within the auxiliary grouping. Materials directly employed in the production of certain goods are frequently referred to as *direct materials*; factory supplies are *indirect materials*.

Although factory supplies may be separately summarized, they should be reported as a part of the company's inventories in view of their ultimate application to the productive process. Factory supplies should be distinguished from other supplies that make contributions to the delivery, sales, and general administrative functions of the enterprise. Such other supplies are not a part of the company's inventories but rather call for classification as prepaid expenses.

*Goods in Process.* Goods in process consist of uncompleted goods in the process of production. This inventory is considered to be made up of three cost elements: (1) *direct materials*, (2) *direct labor* or *productive labor*, and (3) *factory overhead* or *burden*. The cost of materials identified with the goods in production is included under (1). The cost of labor identified with goods in production is included under (2). The portion of factory overhead considered properly assignable to goods still in production forms the third element of cost. Factory overhead consists of all manufacturing costs other than direct materials and direct labor. It includes factory materials and labor not directly identified with the production of specific products. It also includes

such other general factory costs as depreciation, repairs, taxes, and insurance, as well as a reasonable share of managerial costs other than those relating solely to the sales or administrative functions of the business.

*Finished Goods.* Finished goods are the completed products awaiting sale. The cost of the finished product consists of the costs of materials, labor, and overhead assigned to it. Finished parts that were purchased and that are to be used in the production of the finished product are normally classed as raw materials; finished parts that are held for purposes of sale may be considered finished goods.

### **INVENTORIES IN THE MEASUREMENT OF PROFIT**

When goods acquired are all sold within a fiscal period, the determination of the gross profit on sales is a simple matter. The total cost of goods acquired is also the cost of goods sold that is properly chargeable to revenue; the problem of an inventory value to be carried into the new period does not arise. Such a situation, however, is seldom found in practice. Normally, a part of the goods acquired remains on hand at the end of the period. A value must be assigned to such goods. This value is subtracted from the total merchandise acquisition costs in arriving at the cost of goods chargeable to revenue of the current period and is carried into the subsequent period to be charged against the revenue that will emerge from the sale of the inventory. Adequate records are required for the maintenance of inventory cost data. Such records are also required for the proper control of a constantly moving stock.

Two classes of problems arise in the determination of the inventory to be reported on the statements: (1) what items are properly included in the inventory and (2) what values are to be assigned to such items.

**INVENTORY METHODS** Quantities of merchandise on hand are ascertained either by a physical inventory or by maintenance of a *perpetual* or *book inventory* system. The physical inventory method involves counting, measuring, or weighing the units on hand at the end of the period. The perpetual inventory system requires the maintenance of records that offer a running summary of inventory items on hand.

When perpetual inventory records are maintained by a business, individual accounts are kept for each class of goods on hand. Increases in inventory items are recorded by debits, and decreases are recorded by credits; the resulting balances represent the amounts on hand. In the manufacturing organization, a perpetual system applied to inventories calls for recording the full movement of goods through individual

accounts maintained for raw materials, goods in process, and finished goods. Perpetual records may be kept in terms of quantities only or in terms of both quantities and costs.

When the perpetual system is employed, physical counts of the units on hand should be made and account balances should be verified at least once a year, and preferably at more frequent intervals. The frequency of such physical inventories will vary depending upon the nature of the goods as well as the rate of movement of the goods. A plan of continuous checking of inventory items on a rotation basis is frequently employed in practice. Variations between the book record and the amounts actually on hand resulting from errors, shrinkage, breakage, theft, and other causes should be recognized and the book inventories should be brought into agreement with the results of the physical count. An inventory adjustment account is debited and the book inventory is credited when the actual inventory is found to be less than the book figure; the inventory adjustment account is credited and the book inventory is debited when the actual inventory exceeds the book figure. The inventory adjustment account balance is closed along with other profit and loss accounts at the end of the period.

Practically all large trading and manufacturing enterprises, as well as many relatively small organizations, have adopted the perpetual inventory system as an integral part of their record keeping. This system offers a continuous check and control over inventories, as well as immediate data concerning inventory position. The additional costs of maintaining such a system are usually well repaid by the services provided through its adoption.

**ITEMS TO BE INCLUDED IN INVENTORY** As a general rule, goods should be included in the inventory of the party holding title.

The "passing of title" is a legal term designating the point at which ownership changes. When terms of a sale are "f.o.b. shipping point," title passes to the buyer with the loading of goods at the point of shipment. Shipment, here, calls for recognition of a sale on the books of the seller. Such acquisitions, together with the payables for such goods, should be recognized by the buyer at the end of each fiscal period and should be reported on the balance sheet even though there is no physical possession at this time. Such goods may be reported in the inventory section under the title "Merchandise in Transit." The purchases records may be kept open beyond the fiscal period to permit the recognition as purchases of goods in transit as of the end of the period, or goods in transit may be recorded by means of an adjusting entry. When terms of a sale are "f.o.b. destination," no recognition of the transaction

is required on the books of the seller or of the buyer until the goods are received by the buyer.

Goods are frequently transferred to dealers on a consignment basis, the consignor retaining title to such goods until their sale, at which time title passes to the customer. The consignor, then, should continue to report consigned goods as a part of his inventory under an appropriate title such as "Merchandise on Consignment" until the goods are sold and a receivable or cash is recognized. The consignee does not own the consigned goods; hence he reports neither consigned goods nor an obligation for such goods on his statements. Other merchandise owned by a business but in the possession of others, such as goods in the hands of salesmen and agencies and goods held by customers on approval, are properly shown as a part of the ending inventories.

Special circumstances may justify exceptions from the general rule of inventory recognition on the basis of legal title. Two examples of such exceptional treatment follow: (1) Conditional sales and installment sales may provide for a retention of title by the seller until the sales price is fully recovered; however, when completion of the contract and the ultimate transfer of title is practically assured, the transaction may be recognized as a regular sale. Conversely, when title is withheld on a purchase until full payment is made, treatment as a regular purchase may be suggested in view of the intent of management to comply with contractual terms and ultimately acquire title. (2) Incoming goods in transit are frequently disregarded in reporting inventories. This practice may be justified when amounts involved are not large, when readers of the statements may be expected to assume that there is a regular and continuous flow of goods inward, when goods are subject to rejection, and when the inclusion of such items before their receipt and acceptance offers certain practical difficulties. When, in the judgment of the accountant, circumstances are such that the rule of title does not need to be observed, the treatment chosen should be applied consistently, with appropriate disclosure on the statements of the special practices that are followed.

#### **EFFECTS OF ERRORS IN RECORDING INVENTORY POSITION**

The misstatement of inventory position through errors in count or measurement or through errors in inclusion results in misstatements on both the balance sheet and the income statement. The effects of inventory errors on the accounting statements prepared at the end of the fiscal period are indicated in the summary that is given on the following page.

(a) Overstatement of the ending inventory through errors in the count of goods on hand, inclusion in inventory of goods not owned or goods already sold, etc.:

Current year:

Income statement — overstatement of the *ending* inventory will cause the cost of goods sold to be understated and the net income to be overstated.

Balance sheet — the inventory will be overstated and the capital will be overstated.

Succeeding year:

Income statement — overstatement of the *beginning* inventory will cause the cost of goods sold to be overstated and the net income to be understated.

Balance sheet — the error of the previous year will have been counterbalanced on the succeeding income statement and the balance sheet will be correctly stated.

(b) Understatement of ending inventory through errors in the count of goods on hand, failure to include goods purchased, or goods transferred but not yet sold, etc.: misstatements indicated in (a) above are reversed.

(c) Overstatement of ending inventory accompanied by failure to recognize sales and corresponding receivables at end of period:

Current year:

Income statement — sales are understated by the sales price of the goods and cost of goods sold is understated by the cost of the goods relating to the sales; gross profit and net income are thus understated by the gross profit on the sales.

Balance sheet — receivables are understated by the sales price of the goods and the inventory is overstated by the cost of the goods that were sold; current assets and capital are thus understated by the gross profit on the sales.

Succeeding year:

Income statement — sales of the preceding year are recognized here in sales and cost of sales; gross profit and net income, therefore, are overstated by the gross profit on such sales.

Balance sheet — the error of the previous year is counterbalanced on the succeeding income statement and the balance sheet is now correctly stated.

(d) Understatement of ending inventory accompanied by failure to recognize purchases and corresponding payables at end of period:

Current year:

Income statement — purchases are understated, but this is counterbalanced by the understatement of the ending inventory; gross profit and net income are correctly stated as a result of the counterbalancing effect of the error.

**Balance sheet** — while capital is reported correctly, both current assets and current liabilities are understated; when current assets exceed liabilities, such understatements by the same amount result in a ratio of current assets to current liabilities that is more favorable than is actually the case.

**Succeeding year:**

**Income statement**—the beginning inventory is understated, but this is counterbalanced by an overstatement of purchases, as purchases at the end of the prior year are recognized currently; gross profit and net income are correctly stated as a result of the counterbalancing effect of the error.

**Balance sheet** — the error of the previous year no longer affects balance sheet data.

Discoveries of inventory errors call for careful analyses of the effects of such errors and the preparation of entries to correct real and nominal accounts so that current and future activities may be accurately expressed in the accounts.

## **INVENTORY VALUATION**

In viewing the inventory in its dual position as (1) a value that is reported on the operating statement in developing costs properly applicable to current revenue and (2) a value reported on the balance sheet that represents the charge that is properly assignable to future periods, one must accept cost as the primary basis for inventory valuation. When there has been a marked change in the value of the inventory between the purchase date and the date of inventory, the question arises as to whether some recognition should be given to current inventory replacement values. With a decline in prices, practice has generally answered this question in the affirmative by applying the valuation method of "cost or market, whichever is lower." Special conditions may suggest the use of valuation methods other than cost or market, whichever is lower. For example, under certain circumstances practice has sanctioned the full departure from cost and the use of a sales price or a modified sales price basis. The principal inventory valuation methods and their special applicabilities will be considered in detail. Attention is directed in this chapter to the measurement of cost that is required when inventories are to be valued at cost and also when cost is to be used as the first step in the development of a value in terms of cost or market, whichever is lower.

## **INVENTORY COST**

The determination of the cost of the inventory may be no simple matter. First, it involves a determination of the expenditures that actually enter into the

cost of the goods that are acquired. Second, it involves the application of a method for relating the different costs of the goods acquired to periodic revenue.

Inventory costs may be considered to consist of all expenditures, both direct and indirect, relating to inventory acquisition, preparation, and placement for sale. In the case of raw materials or goods acquired for resale, cost includes all expenditures involved in the acquisition of the goods, including buying costs, freight in, duties, taxes, insurance, and storage. Certain expenditures can be identified with specific acquisitions or can be apportioned to inventory items in some equitable manner. Other expenditures may be relatively small and may be difficult to allocate satisfactorily to goods acquired. Such items are frequently excluded in the calculation of inventory costs and are charged in total to current revenue.

The elements involved in the cost of manufactured products have already been mentioned. Proper accounting for materials, labor, and overhead items and their identification with goods in process and finished goods inventories may be best achieved through adoption of a cost accounting system designed to meet the special requirements of the business unit. Certain costs relating to the acquisition or the manufacture of goods may be considered of an abnormal nature and may be excluded in arriving at inventory cost. For example, charges arising from idle plant and facilities, excessive spoilage, and reprocessing are normally considered extraordinary items chargeable in total to current revenue. Only that portion of general and administrative costs that is clearly related to procurement or production should be included in inventory costing; selling expenses should be wholly excluded.

#### **DISCOUNTS AS REDUCTIONS IN COST**

Discounts that are treated as a reduction of cost in recording the acquisition of goods should likewise be treated as a reduction in the cost assigned to the inventory. *Trade discounts* are discounts from the list price allowed to the buyer. Purchases should always be recorded less such trade discounts, and the inventory cost should be recognized on an equivalent basis. In the case of *cash discounts*, which represent discounts allowed only upon payment of invoices within a limited period, inventory treatment depends upon whether such discounts are regarded as a reduction in cost or as a source of income. If cash discounts are treated as a subtraction from purchases, the inventory balance should be correspondingly reduced; if cash discounts are reported as other income, inventories should be reported at invoice cost without reference to such discounts.

To illustrate the two practices, assume that cash discounts averaging 1% are taken on purchases, and that one half of the merchandise available for sale remains on hand at the end of each period. If inventories are valued at cost, they would be reported as follows:

	Discounts as a Reduction of Cost		Discounts as Other Income	
1st Year:				
Sales		90,000		90,000
Cost of goods sold:				
Purchases	100,000		100,000	
Less: Purchases discounts	1,000			
	99,000			
Less: Ending inventor	49,500	49,500	50,000	50,000
Gross profit		40,500		40,000
Operating expenses		30,000		30,000
				10,000
Other income:				
Purchases discounts				1,000
Net income		10,500		11,000
2nd Year:				
Sales		90,000		90,000
Cost of goods sold:				
Beginning inventory	49,500		50,000	
Purchases	50,000		50,000	
	99,500			
Less: Purchases discounts	500			
	99,000		100,000	
Less: Ending inventor	49,500	49,500	50,000	50,000
Gross profit		40,500		40,000
Operating expenses		30,000		30,000
				10,000
Other income:				
Purchases discounts				500
Net income		10,500		10,500

It will be observed that, after the first year, similar net income measurements result from the use of either method in the absence of widely fluctuating inventories.

Treatment of purchases discounts as income is defended on the grounds that the buyer takes special measures in liquidating a claim in advance of its due date to secure such discounts. There may be expenses attached to raising capital for the advance liquidation of debts. Financial management is charged with such costs; discounts earned,

then, may be properly credited to financial management and matched against such expenses.

However, serious objection can be taken to the foregoing practice on the grounds that it provides for the recognition of gain from the act of buying. Sound accounting provides for the recognition of gain only from the sale of goods or services, not from their purchase. The buyer is offered goods at a net or cash price, and no more than this actually needs to be paid. Settlement is almost invariably made on a cash basis in view of the difference between the cash discount and the cost of borrowing money for such a discount period. In fact, when settlement is not made within the discount period, a failure on the part of financial management is indicated either through carelessness in considering payment alternatives or through financial inability to avoid the extra charge. The arguments raised in connection with the treatment of purchases discounts by the buyer have their counterpart in the treatment of sales discounts by the seller.

Treatment of purchases discounts taken as a subtraction from purchases is recognition of such discounts as an adjustment in purchase cost. But this practice offers only partial recognition of the cost view just developed. Full agreement with the preceding analysis is obtained by reporting purchases net and recording any amounts paid in excess of these amounts as Purchases Discounts Lost, a financial management expense item. When such a practice is to be followed, two methods may be employed: (1) accounts payable may be reported net or (2) accounts payable may be reported at the gross invoice price with a payable offset balance or liability valuation account reporting the purchases discounts available. The two methods are illustrated below:

Transaction	Accounts Payable Reported Net	Accounts Payable Reported Gross
Purchase of merchandise priced at \$1,000 less trade discount of 30% 20% and a cash discount of 2%:	Purchases (or Inventory) 548 80 Accounts Payable 548 80	Purchases (or Inventory) 548 80 Allowance for Purchases Dis- counts 11 20 Accounts Payable 560 00
\$1,000 less 30% \$700		
\$ 700 less 20% \$560		
\$ 560 less 2% \$548 80		
	(a) Accounts Payable 548 80 Cash 548 80	(a) Accounts Payable 560 00 Allowance for Purchases Discounts 11 20 Cash 548 80
Payment of invoice:		
(a) Assuming payment within discount period.		

Transaction	Accounts Payable Reported Net	Accounts Payable Reported Gross
(b) Assuming payment after discount period.	(b) Accounts Payable 548 80 Purchases Discounts Lost 11 20 Cash 560 00	(b) Accounts Payable. 560 00 Cash 560 00 Purchases Discounts Lost. 11 20 Allowance for Purchases Discounts 11 20

While the recording of purchases net and the recognition of cash discounts lost as an expense is of obvious merit, it has failed to obtain wide adoption. Chief objection has been made on practical grounds. Use of this method calls for the conversion of gross amounts as stated by invoices into net amounts relating to individual acquisitions and the subsequent application of such converted values throughout the accounting for inventories. This is normally less convenient than accounting in terms of gross invoice charges.

#### **SPECIFIC IDENTIFICATION OF COSTS WITH INVENTORY ITEMS**

Revenue may be charged for goods sold on the basis of identified costs of the specific items sold. Such practice calls for the identification of a cost with each item acquired. When perpetual inventories are maintained, the sale of goods calls for the transfer of articles and their identified costs to cost of goods sold. When a system of physical inventories is maintained, goods on hand require identification with specific invoices for cost valuation. In each instance, costs related to units sold are reported as cost of goods sold and costs identified with goods on hand remain to be reported as the ending inventory.

While such identification procedure may be considered a highly satisfactory approach to the revenue-cost matching process under normal circumstances, this practice may be difficult or impossible to apply or may be considered to be inadequate in view of special existing conditions. When an inventory is composed of a great many items, some being similar items acquired at different times and at different prices, cost identification procedures may prove to be slow, burdensome, and rather costly. When identical items have been acquired at different times, their identity may be lost and cost identification thus denied. Furthermore, marked changes in costs during a period may suggest charges to revenue on a basis other than past identified costs.

When specific identification procedures are considered inappropriate, alternate methods of assigning costs to the movement of goods may be employed, the choice of method depending upon the assump-

tion that is made with respect to the costs properly chargeable to current revenue. Methods for charging costs to revenue that have achieved widest application are (1) *first-in, first-out*, (2) *average*, and (3) *last-in, first-out*.

### FIRST-IN, FIRST-OUT METHOD

The first-in, first-out method (*fifo* method) is based on the assumption that costs should be charged out in the order in which incurred. Inventories are thus stated in terms of most recent costs. To illustrate the application of this method, assume the following data for a certain commodity:

January 1	Inventory	200 units at \$10	\$ 2,000
12	Purchase	400 units at 12	4,800
24	Purchase	300 units at 11	3,300
30	Purchase	100 units at 12	1,200
		<hr/>	<hr/>
	Totals	1,000	\$11,300

A physical inventory on January 31 shows 300 units on hand. The inventory would be considered to be composed of the most recent purchases, and its cost would be calculated as follows:

Most recent purchase, January 30	100 units at \$12	\$1,200
Next most recent purchase, Jan. 24	200 units at 11	2,200
	<hr/>	<hr/>
Totals	300	\$3,400

If the ending inventory is recorded at a cost of \$3,400, cost of goods sold is \$7,900 (\$11,300 - \$3,400), and operations are charged with the earliest costs.

When perpetual inventory accounts are maintained, a form similar to that illustrated at the top of the opposite page is kept to record the cost of units issued and the cost relating to the goods on hand. The first column is used for memorandum entries reporting amounts ordered. Remaining columns show the quantities and values relating to goods acquired, goods issued, and balances on hand.

### AVERAGE METHOD

Use of an average cost is based on the assumption that goods should be charged out on the basis of average cost relating to total units acquired. Inventories are likewise stated at average. Assuming the cost data in the preceding section, a physical inventory of 300 units on January 31 would have an average cost as follows:

## COMMODITY X (FIFO)

ORDERED	DATE	RECEIVED		ISSUED		BALANCE	
MEMO-	Jan. 1					200 at \$10	2,000
RANDOM ENTRIES	12	400 at \$12	4,800			200 at \$10	2,000
						400 at \$12	4,800
	16			200 at \$10 300 at \$12	2,000 3,600	100 at \$12	1,200
	26	300 at \$11	3,300			100 at \$12 300 at \$11	1,200 3,300
	29			100 at \$12 100 at \$11	1,200 1,100	200 at \$11	2,200
	30	100 at \$12	1,200			200 at \$11 100 at \$12	2,200 1,200

January 1	Inventory	200 units at \$10	\$ 2,000
12	Purchase	400 units at 12	4,800
24	Purchase	300 units at 11	3,300
30	Purchase	100 units at 12	1,200
	Totals	1,000	\$11,300

$$\text{Average cost} = \frac{\$11,300}{1,000} = \$11.30$$

Ending inventory: 300 units at \$11.30 = \$3,390.

If the ending inventory is recorded at a cost of \$3,390, cost of goods sold is \$7,910 (\$11,300 - \$3,390), and operations are charged with average cost.

The procedure illustrated above is commonly referred to as a *weighted average method* since the average cost is influenced by the number of units acquired at each price.

When perpetual inventories are maintained but the costs of units issued are not recorded until the end of a period, a weighted average cost for the period may be calculated at that time and the accounts may be credited for the average cost of total units issued. Normally, costs relating to issues are recorded currently, and it is necessary to calculate costs on the basis of the average on the date of issue. This requires the calculation of an average cost immediately after the receipt of each additional lot of merchandise. This method, which involves successive average recalculations, is referred to as a *moving average method*.

The use of the moving average method is illustrated below:

COMMODITY X (MOVING AVERAGE)

ORDERED	DATE	RECEIVED		ISSUED		BALANCE	
MEMO-	Jan. 1					200 at \$10.00	2,000
RANDOM	12	400 at \$12	4,800			600 at \$11.33	6,800
ENTRIES	16			500 at \$11.33	5,665	100 at \$11.35	1,135
	26	300 at \$11	3,300			400 at \$11.09	4,435
	29			200 at \$11.09	2,218	200 at \$11.09	2,217
	30	100 at \$12	1,200			300 at \$11.39	3,417

On January 12 the new unit cost of \$11.33 was found by dividing \$6,800, the total cost, by 600, the number of units on hand. On January 16, the dollar balance, \$1,135, represented the previous balance, \$6,800, less \$5,665, the cost assigned to the 500 units issued on this date. New unit costs were calculated on January 26 and 30 when additional units were acquired.

**LAST-IN, FIRST-OUT METHOD**

The last-in, first-out method (*lifo* method) is based on the assumption that the latest costs should be the first that are charged out. Inventories are thus stated in terms of earliest costs. Assuming the cost data in the preceding section, a physical inventory of 300 units on January 31 would have a cost as follows:

Earliest costs relating to goods, January 1	200 units at \$10	\$2,000
Next cost, January 12	100 units at \$12	1,200
Totals	300	\$3,200

If the ending inventory is recorded at a cost of \$3,200, cost of goods sold is \$8,100 (\$11,300 - \$3,200), and operations are charged with the latest costs.

When perpetual inventories are maintained but the cost of units issued is not recorded until the end of the period, the most recent costs relating to the total units issued may be determined and the account credited for this cost. Cost, then, is the same as reported above. Normally, however, costs relating to issues are recorded currently, and it is necessary to calculate costs on a last-in, first-out basis using the cost data as shown on the date of issue. This is illustrated on the following page.

COMMODITY X (LIFO)

ORDERED	DATE	RECEIVED		ISSUED		BALANCE	
MEMO-	Jan. 1					200 at \$10	2,000
RANDOM	12	400 at \$12	4,800			200 at \$10 400 at \$12	2,000 4,800
ENTRIES	16			400 at \$12 100 at \$10	4,800 1,000	100 at \$10	1,000
	26	300 at \$11	3,300			100 at \$10 300 at \$11	1,000 3,300
	29			200 at \$11	2,200	100 at \$10 100 at \$11	1,000 1,100
	30	100 at \$12	1,200			100 at \$10 100 at \$11 100 at \$12	1,000 1,100 1,200

It should be noted that a cost of \$3,200 was obtained for the physical inventory, whereas \$3,300 was obtained when costs were calculated as goods were issued. This difference is due to the fact that it was necessary to charge out 100 units at \$10 in the issue of January 16. The ending inventory thus reflects only 100 units of the beginning inventory. Where units were not charged out currently, the ending inventory was considered to consist of the cost of the 200 units reflected in the beginning inventory plus 100 units at the earliest acquisition cost of the current period.

EFFECTS OF COST  
FLOW PROCEDURES  
COMPARED

In the absence of significant price-fluctuation in the merchandise acquired, use of any of the three methods just illustrated leads to approximately the same result. In the examples given, where costs fluctuated from \$10 to \$12 per unit, inventory costs differed to some degree, ranging from \$3,200 to \$3,417, as follows:

	PHYSICAL INVENTORY	PERPETUAL INVENTORY
First-in, first-out	\$3,400	\$3,400
Average	3,390	3,417
Last-in, first-out	3,200	3,300

Assuming that inventories are recorded at cost, variations between costs obtained through use of the first-in, first-out and the last-in, first-out methods may become relatively significant in a period of steadily rising or falling prices. Use of the first-in, first-out method results in inventories being reported near or at current costs, while

use of the last-in, first-out method results in inventories being reported at a more or less fixed amount.

The effect upon the net profit is of even greater significance. Use of first-in, first-out in a period of rising prices matches rising sales prices with oldest low-cost inventory, thus expanding the gross margin on sales. In a period of falling prices, declining sales prices are matched against oldest high-cost inventory, thus narrowing the margin on sales. On the other hand, use of last-in, first-out relates current high costs of acquiring merchandise with rising sales prices in a period of rising prices, and low costs of acquiring merchandise with declining sales prices in a period of falling prices. The weighted average method recognizes both past and present costs in the inventory. However, ordinarily results will closely parallel first-in, first-out costs since purchases during the period are generally several times the inventory balance carried into the period, and average costs forming the ending inventory valuation will thus approach current costs.

The illustration that follows demonstrates the results obtained from inventory valuation at cost with the use of the three methods in periods of rising and falling prices. Assume that the Wilcox Sales Co. sells its goods at 50 per cent in excess of current prevailing costs from 1950 to 1953. It sells out and winds up activities at the end of 1953. Sales, costs, and gross profits using each of the three methods are listed below<sup>1</sup>

	F I R S T			W E I G H T E D A V E R A G E			L A S T		
	A M O U N T S			A M O U N T S			A M O U N T S		
1950									
Sales, 500 units @ \$9			4 500			4 500			4 500
Inventory, 200 units	@ \$5	1 000		200 @ \$5	1 000		200 @ \$5	1 000	
Purchases, 500 units	@ \$6	3 000		500 @ \$6	3 000		500 @ \$6	3 000	
			4 000		4 000				4 000
Ending Inv., 200 units	@ \$6	1 200	2 800	200 @ \$5 71 (\$4 000 ÷ 700)	1 142	2 800	200 @ \$5	1 000	3 000
Gross Profit			1 700			1 612			1 500
1951									
Sales, 450 units @ \$12			5 400			5 400			5 400
Inventory, 200 units	@ \$6	1 200		200 @ \$5 71	1 142		200 @ \$5	1 000	
Purchases, 500 units	@ \$8	4 000		500 @ \$8	4 000		500 @ \$8	4 000	
			5 200		5 142				5 000
Ending Inv., 250 units	@ \$8	2 000	3 200	250 @ \$7 35 (\$5 142 ÷ 700)	1 835	3 200	200 @ \$5	1 000	3 600
						50 @ \$8		400	
Gross Profit			2 200			2 036			1 800
1952									
Sales, 475 units @ \$10 50			4 988			4,988			4,988
Inventory, 250 units	@ \$8	2 000		250 @ \$7 35	1 835		200 @ \$5		
							50 @ \$8	400	1 400
Purchases, 450 units	@ \$7	3 150		450 @ \$7	3 150		450 @ \$7	3 150	
			5 150		4 988				4 550
Ending Inv., 225 units	@ \$7	1 575	3,575	225 @ \$7 13 (\$4 988 ÷ 700)	1,601	3 384	200 @ \$5		
							25 @ \$8		
Gross Profit			1,113			1,604			1,638

<sup>1</sup>Totals in the illustration are calculated to the nearest dollar

	FIFO			WEIGHTED AVERAGE			LIFO		
	AMOUNTS			AMOUNTS			AMOUNTS		
1953:									
Sales, 525 units @ \$7.50			3,938			3,938			3,938
Inventory, 225 units	@ \$7	1,575		225 @ \$7.13	1,604		200 @ \$5		
							25 @ \$8	1,200	
Purchases, 300 units	@ \$5	1,500	3,075	300 @ \$5	1,500	3,104	300 @ \$5	1,500	2,700
Gross Profit			863			834			1,238

The foregoing transactions are summarized below:

YEAR	SALES	FIFO			WEIGHTED AVERAGE			LIFO		
		COST OF SALES	GROSS PROFIT	GROSS PROFIT % TO SALES	COST OF SALES	GROSS PROFIT	GROSS PROFIT % TO SALES	COST OF SALES	GROSS PROFIT	GROSS PROFIT % TO SALES
1950	4,500	2,800	1,700	37.8	2,858	1,642	36.5	3,000	1,500	33.3
1951	5,400	3,200	2,200	40.7	3,304	2,096	38.8	3,600	1,800	33.3
1952	4,988	3,575	1,413	28.3	3,384	1,604	32.2	3,350	1,638	32.8
1953	3,938	3,075	863	21.9	3,104	834	21.2	2,700	1,238	31.4
	18,826	12,650	6,176	32.8%	12,650	6,176	32.8%	12,650	6,176	32.8%

Although the total cost of goods sold and the total gross profit are the same for the four-year period under each of the methods used, the use of first-in, first-out resulted in increased gross profit percentages in periods of rising prices and a contraction of margins in a period of falling prices, while last-in, first-out resulted in relatively steady gross profit percentages in spite of fluctuating prices. The weighted average method, on the other hand, offered results closely comparable to those obtained by first-in, first-out. Assuming operating expenses at 30 per cent of sales, a profit would be reported for each year with the use of last-in, first-out; larger profits would be reported for 1950 and 1951 with the use of first-in, first-out, but 1952 and 1953 would prove loss years. Inventory valuation on the last-in, first-out basis thus tends to smooth off the peaks and fill in the troughs of the business cycle.

**EVALUATION OF COST FLOW PROCEDURES** Fifo assumes the movement of unidentifiable units through processing and out to the customer in the same order in which such units were acquired. The average method assumes a complete commingling of units acquired with similar units on hand, and movement out in such commingled state. Lifo assumes a building up of a stock and the use of latest units acquired to satisfy sales requirements.

Both *fifo* and *average* methods may be supported as logical and systematic approaches to the flow of cost when it is impractical or impossible to achieve cost identification with goods as these move forward. Revenue is charged with costs considered applicable to its realization; ending inventories are reported in terms of recent costs, costs that fairly present the current inventory position and that may equitably be assigned to revenues of the subsequent period.

The cost assignment resulting from the application of *lifo* cannot normally be considered in harmony with a movement of goods through the business. One would seldom encounter a practice of priorities for the use or transfer of goods assigned to latest acquisitions. Sequences involved in the physical movement of goods are disregarded in view of another factor that is considered of greater significance for purposes of cost assignment. This factor is the desirability of charging revenue with most-current costs, that is, costs that are more nearly representative of the cost of replacing the gap in the inventory occasioned by its transfer out. As a matter of fact, some accountants have proposed going beyond *lifo* by charging revenue with the replacement cost of goods sold (next-in, first-out, or *nifo*) rather than with latest acquisition costs.

The current charges approach, it is argued, offers a more accurate statement of earnings accruing to the ownership group. The use of *fifo* in a period of rising prices, for example, produces a profit that is not fully available to owners but rather must be applied in part or in whole to higher cost inventory replacement; in a period of falling prices, a profit is produced that fails to show the full amount accruing to owners in view of sales activities plus the additional resources made available through lower cost inventory replacement. *Lifo*, on the other hand, by charging revenue with latest costs, avoids the recognition of "paper profit or loss" relating to inventories. This aspect of the measurement process may be illustrated as follows:

<u>INVENTORY</u>	<u>SALES PRICE</u>	<u>LATEST PURCHASE PRICE</u>	<u>FIFO PROFIT</u>	<u>LIFO PROFIT</u>	<u>DOLLAR GAIN AFTER UNIT REPLACEMENT</u>
With Rising Prices:					
(Each unit) \$10	\$15	\$12	\$5	\$3	\$3
With Falling Prices:					
(Each unit) \$10	\$12	\$8	\$2	\$4	\$4

Under *lifo*, gains that are not recognized in a period of rising prices when inventory is replaced at higher costs receive recognition in a period of falling prices when inventory is replaced at lower costs.

*While arguments for lifo as a means of achieving satisfactory income measurement are impressive, one must consider the deficiencies of this method as applied to the recognition of inventory position for balance sheet purposes. The lifo inventory value consists of an assembly of costs or "cost layers" for the oldest acquisitions, values that may differ materially from current costs. Such inventory values enter into the determination of working capital and may seriously distort this measurement. Inventory position is also a determinant of total assets and capital. Adoption of lifo in a period of rising prices results in inventory understatement, a practice that is normally rationalized as acceptable on conservative grounds; adoption in a period of falling prices results in the overstatement of inventories, and special action would normally follow to write down such balances to inventory replacement cost.*

While last-in, first-out has been widely accepted in recent years, largely on the basis of its ability to smooth the profit curve, it is not the effects of a procedure but its merit as a means of sound measurement that should determine its acceptance. Depreciation, for example, could be recorded in accordance with the ability of revenue to absorb such a charge in smoothing the profit curve. Reserves could be established to "equalize" profits. Such practices would not lead to measurements of what actually took place; they would serve to obscure measurements and thus contradict the chief aim of accounting, to report faithfully what actually took place.

Support for lifo must be found in its merit as a means of matching current costs against current revenue. However, those opposing lifo insist that it is actual costs, as best determined, that should be applied to revenue. This group suggests that after such measurements are developed and dollar changes are determined, these can be appropriately analyzed in arriving at conclusions concerning economic gain, changes in resources, and the availability of resources for continued operations and for distribution to owners.

**OTHER COST  
PROCEDURES**

While the methods previously described for arriving at cost are those most widely used, several other procedures are sometimes encountered and deserve mention.

**COST OF LATEST  
PURCHASES**

Sometimes merchandise on hand is valued at costs of the latest purchases regardless of quantities on hand. When the inventory consists largely of recent purchases, this method may give results closely approximating those ob-

tained through specific cost identification or first-in, first-out procedures, and such results are available with considerably less work. However, when major price changes have taken place and the quantities of goods on hand exceed the latest quantities purchased by material amounts, use of latest costs may result in serious cost misstatement.

### **SIMPLE AVERAGE OF COSTS**

Classes of goods are sometimes valued at a simple average of all of the costs for the period without regard to the number of units acquired on each purchase. With significant differences in quantities acquired, the disregard of the weight factors may result in the development of unrepresentative costs.

### **BASE STOCK METHOD**

Some companies employ what is known as the *base stock* or *normal stock* method. This method assumes that a minimum stock is a requirement of the business; current purchases are means of satisfying current sales requirements and hence their cost is properly applicable to revenues. The minimum or normal inventory is considered as a permanent element to be valued at a constant figure, frequently the lowest cost experienced for the stock. At the end of the period the quantity of goods on hand is determined. The base stock quantity is valued at the original base cost; an amount in excess of the base stock quantity is regarded as a temporary inventory accretion and is priced at current replacement cost; a shortage in the base stock quantity is viewed as an amount temporarily borrowed to meet sales requirements, the borrowing to be charged to sales at current replacement value in view of the cost to be incurred in restoring the inventory deficiency. To illustrate, assume a base stock of 100,000 units at \$1. The current replacement cost of such units is \$1.60. An inventory consisting of 120,000 units is valued as follows:

Base stock	100,000 units @ \$1 00	\$100,000
Add:	20,000 units @ 1 60	32,000
		<hr/>
Inventory value . . . . .		\$132,000
		<hr/>

An inventory consisting of 90,000 units would be valued as follows:

Base stock	100,000 units @ \$1.00	\$100,000
Deduct:	10,000 units @ 1 60	16,000
		<hr/>
Inventory value . . . . .		\$ 84,000
		<hr/> <hr/>

The base stock is thus regarded as the equivalent of a permanent asset; operations are charged with the costs of replenishing and maintaining the normal stock. Results obtained through the base stock method are closely comparable with those obtained by the last-in, first-out method. Charges to revenue are those costs currently experienced. The inventory, normally reported at the lowest value in the experience of the organization, may be materially understated in terms of current market. Use of the base stock method is not permitted for income tax purposes.

### STANDARD COSTS

Manufacturing inventories are frequently reported at *standard costs*, which are representative, average, or ideal costs relating to the material, labor, and overhead elements found in the inventories. Differences between actual costs and standard costs that arise from extraordinary items such as waste, inefficiencies, and idle time, are charged to revenue and absorbed currently. Standard costs are developed by careful analysis of production factors and experience. Standards should be reviewed at frequent intervals to determine whether they still offer reliable evaluations of manufacturing costs. Changes in current conditions will call for adjustment in the standards.

### COST APPORTIONMENT BY RELATIVE SALES VALUE METHOD

Mention needs to be made of a special accounting problem that arises when different commodities are purchased for one lump sum.

Such purchase calls for the apportionment of the single cost to the units in some equitable manner. This cost apportionment should recognize the utility made available by the different units. Ordinarily, the estimated sales value of the different units provides the best measure of respective utilities, and accordingly cost is allocated on the basis of such estimated sales value. Such cost allocation is referred to as valuation by the *relative sales value method*. Costs derived through apportionment in terms of sales price are charged to revenue as units are sold. To illustrate this procedure, assume the purchase by a realty company of 60 acres of land for \$220,000. The costs of grading, landscaping, streets, walks, water mains, lighting, and other improvements total \$300,000. The property is divided into two groups of lots as follows:

- Class A — 100 lots that are to sell for \$1,500 each.
- Class B — 200 lots that are to sell for \$2,500 each.

The total cost of the property, \$520,000, is to be apportioned to the lots on the basis of their relative sales values. The cost allocation is made as follows:

Class A lots, 100 at \$1,500.....	\$150,000
Class B lots, 200 at \$2,500.....	500,000
Total sales value of Class A and B lots.....	<u>\$650,000</u>

	<u>TOTAL</u>	<u>NO. OF LOTS</u>	<u>COST ASSIGNED TO EACH LOT</u>
Cost apportioned to Class A lots:			
$\frac{150,000}{650,000} \times \$520,000 =$	\$120,000	100	\$1,200
Cost apportioned to Class B lots:			
$\frac{500,000}{650,000} \times \$520,000 =$	400,000	200	\$2,000
Total .....	<u>\$520,000</u>		

The sale of lots of either class results in a constant gross profit of 20% on sales. Sale of a Class A lot would be recorded as follows:

Contracts Receivable .....	1,500	
Real Estate — Lot A-56 .....		1,200
Gross Profit on Sale of Real Estate.....		300

When, in certain manufacturing organizations, accurate costs cannot be found for certain joint products, costs may be assigned in a manner similar to that just illustrated. The sales value of each product is determined, and the total production cost is then allocated according to the relative sales values of the respective products. For example, assume that the Adams Manufacturing Co. produces Products M and N jointly in one of its processing departments and cannot identify costs with individual products. A summary of manufacturing costs, units finished, and units sold during a period follows:

<u>COSTS</u>		<u>UNITS COMPLETED</u>		<u>UNITS SOLD</u>
Material Cost — A.....	\$15,000	Product M	10,000	6,000 @ \$4.00
Material Cost — B.....	22,000	Product N	8,000	5,000 @ 8.50
Labor .....	26,000			
Manufacturing Expense.	12,600			
	<u>\$75,600</u>			

Cost apportionment is made on the basis of relative sale value of products as follows:

Product M, 10,000 units @ \$4.00.....	\$ 40,000
Product N, 8,000 units @ 8.50.....	68,000
Total market value of Products M and N .....	<u>\$108,000</u>

	<u>TOTAL</u>	<u>UNITS</u>	<u>UNIT COST</u>
Cost apportioned to Product A:			
$\frac{40,000}{108,000} \times \$75,600$	\$28,000	10,000	\$2.80
Cost apportioned to Product B:			
$\frac{68,000}{108,000} \times \$75,600$	47,600	8,000	5.95
	<u>\$75,600</u>		

Cost of goods sold and ending inventory costs for the two products would be as follows:

	COMPLETED		COST OF GOODS SOLD		ENDING INVENTORY BALANCE	
Product M	10,000 units @ \$2.80	\$28,000	6,000 units @ \$2.80	\$16,800	4,000 units @ \$2.80	\$11,200
Product N	8,000 units @ 5.95	47,600	5,000 units @ 5.95	29,750	3,000 units @ 5.95	17,850
		<u>\$75,600</u>		<u>\$46,550</u>		<u>\$29,050</u>

## QUESTIONS

1. Why is so much importance attached to the satisfactory valuation of inventories?

2. (a) What distinction is usually made between raw materials and factory supplies? (b) How would you recommend that these be reported on the balance sheet?

3. (a) What are the three cost elements entering into goods in process and finished goods? (b) What items enter into factory burden?

4. (a) Describe the nature of a perpetual inventory system. (b) What purposes are served by such a system? (c) Does this system eliminate the need for physical inventories? Explain.

5. (a) What items may be considered to compose the cost of raw material acquisitions? (b) Which of these items are normally included as a part of raw material cost for stores purposes? (c) Which of these are normally excluded? What disposition would be made of such items? Why?

6. Distinguish between: (a) direct materials and indirect materials; (b) physical inventory and book inventory; (c) manufacturing direct costs and burden; (d) inventory valuation by fifo and lifo.

7. (a) How does title passing affect the current sections of a balance sheet? (b) Distinguish between a purchase "f.o.b. destination" and a purchase "f.o.b. shipping point."

8. How would you suggest that each of the following items be reported on the accounting statements:

- Manufacturing supplies.
- Goods on hand received on a consignment basis.
- Materials of a customer held for processing.
- Goods received but without an accompanying invoice.
- Goods in stock to be delivered to customers in subsequent periods.

- (f) Goods in hands of agents and consignees.
- (g) Deposits with vendors for merchandise to be delivered in next period.
- (h) Goods in hands of customers on approval.

**9.** State the effects of each of the following errors upon the accounting statements prepared for the current period and those prepared for the succeeding fiscal period:

- (a) Understatement of ending inventory through a miscount of goods on hand.
- (b) Understatement of ending inventory accompanied by failure to record a purchase of goods on which title has passed.
- (c) Understatement of ending inventory accompanied by recognition of a transfer of goods to a consignee as a sale. (Goods remain unsold in the hands of the consignee at the end of each period.)

**10.** State the effect of each of the following errors made by Fields, Inc., upon the balance sheet and the income statement (1) of the current period and (2) of the succeeding period:

- (a) The company fails to record a sale of merchandise on account; goods sold are excluded in recording the ending inventory.
- (b) The company fails to record a sale of merchandise on account; the goods sold are included, however, in recording the ending inventory.
- (c) The company fails to record a purchase of merchandise on account; goods purchased are included in recording the ending inventory.
- (d) The company fails to record a purchase of merchandise on account; goods purchased are not recognized in recording the ending inventory.
- (e) The ending inventory is understated as the result of a miscount of goods on hand.
- (f) The ending inventory is overstated as the result of inclusion of goods held on a consignment basis and never recognized as a purchase.

**11.** The Alpha Co. records purchases discounts taken as income. The Beta Co. records purchases discounts lost as expense. (a) How does the accounting for purchases for each company differ? (b) What are the arguments in favor of each practice? (c) Which practice do you favor? Why?

**12.** What objections can be raised to inventory valuation by specific cost identification procedures?

**13.** Describe and give the arguments in support of each of the following inventory cost methods: (a) fifo, (b) average, (c) lifo.

**14.** Compare the effects of the use of fifo and lifo upon inventory valuation and upon net income measurement in a period of rapidly rising prices.

**15.** Your client, R. J. Anderson, wishes to change from fifo to lifo, having heard that the latter method results in a lower profit figure for income tax purposes. What is your comment and recommendation?

**16.** (a) Describe the base stock method (b) How does this method differ from inventory valuation by lifo?

**17.** (a) Describe the valuation of inventories in terms of standard costs. (b) What precautions are necessary in the use of standards?

**18.** Describe cost apportionment by the relative sales method.

## EXERCISES

1. Perpetual inventory records of the Wallace Co. show 1,000 units of Commodity A on hand at a cost of \$1.15. An actual count of the units discloses only 850 on hand. (a) List possible reasons for the discrepancy. (b) Give the entry that is made to record the discrepancy.

2. The following errors are discovered at the beginning of 1954 in auditing the accounts of the Marshall Sales Corporation. Give the entry to correct each of the following errors, assuming that perpetual inventory records are not maintained:

- (a) The company failed to record a sale on account of \$210 at the end of 1953. The merchandise had been shipped and was not included in the ending inventory. The sale was recorded in 1954 when cash was collected from the customer.
- (b) The company failed to recognize \$400 due from a consignee as a result of goods sold by this party at the end of 1953. The consignee had failed to report the sale of consigned goods and the company included goods of \$260 relating to the consignment sale in goods on consignment.
- (c) The company failed to recognize a purchase on account of \$1,350 at the end of 1953 and also failed to include the goods purchased in the ending inventory. The purchase was recorded when payment was made to the creditor in 1954.
- (d) The company failed to make an entry for a purchase on account of \$60 at the end of 1953, although it included this merchandise in the inventory count. The purchase was recorded when payment was made to the creditor in 1954.
- (e) The company overlooked goods of \$360 in the physical count of goods at the end of 1953.

3. The Whittier Co. buys all of its merchandise from the Elson Manufacturing Co. and is allowed a trade discount of 15% - 10%—10% and a cash discount of 2%. Purchases during January are \$60,000 before discounts. Two thirds of the merchandise acquired is sold in January. At what value should the ending inventory be reported if the cash discount is treated: (a) as a reduction in purchases? (b) as other income?

4. Transactions of the Barlow Co. relating to goods purchased during December are summarized below:

- (a) Purchases were \$10,000, terms 2 10, n/30.
- (b) Accounts of \$8,500 were paid, including accounts of \$8,000 paid within the discount period on which discounts of \$160 were received.

Give the entries to record purchases and invoice payments in December, assuming that:

- (1) Accounts are recorded at invoice price and purchases discounts earned are summarized in the accounts.
- (2) Accounts are recorded net and purchases discounts lost are summarized in the accounts.
- (3) Accounts are recorded at invoice price and purchases discounts lost are summarized in the accounts.

5. The Wilson Manufacturing Company record for Material No. 25A follows:

Sept. 1	Balance	100 units at \$10.	.....	\$1,000
10	Received	200 units at 9.	.....	1,800
20	Received	50 units at 12.	.....	600
28	Received	100 units at 11.	.....	1,100

At the end of the month, 150 units are on hand. Give the cost of the ending inventory, assuming that it is calculated by each of the following methods: (a) first-in, first-out, (b) weighted average, (c) last-in, first-out, (d) cost of latest purchases, (e) simple average of costs.

6. Changes in Commodity X during January are:

Jan. 1	Balance	400 units @ \$5	Jan. 10	Sale 300 units @ \$10
12	Purchase	200 units @ \$6	Jan. 30	Sale 200 units @ \$12
28	Purchase	200 units @ \$7		

- Assuming that perpetual inventories are maintained and that accounts are kept up to date currently, what is the cost of the ending inventory for Commodity X using: (1) fifo; (2) lifo; (3) average?
- Assuming that perpetual inventories are not maintained and that a physical count at the end of the month shows 300 units to be on hand, what is the cost of the ending inventory using each of the three methods listed in part (a)?

7. Nelson, Inc., uses the base stock method for inventory valuation. The base stock quantity and value for Commodity A is: 1,000,000 lbs. at \$.05.

- The inventory on December 31, 1953, consists of 1,150,000 lbs., and the replacement cost per lb. is \$.0625. What value should be assigned to the inventory?
- The inventory on December 31, 1954, consists of 910,000 lbs. and the replacement cost per lb. at this time is \$.07. What value should be assigned to the inventory?

8. The Graham Development Company offers for sale lots in a tract of land that cost the company \$50,000. Lots are classified as follows:

Class	No. of Lots	Sales Price Per Lot
Class A	10	\$2,500
Class B	20	1,500
Class C	25	1,000

One Class A lot and one Class C lot are sold. What entries would be made to record the sales if cost is determined by relative sales values?

9. R. T. Roper, a dry goods dealer, purchased a job lot of 6,200 yards of bolt goods for \$600. Upon receipt of the goods, he selected the 1,600 yards of best quality and priced them at 25c per yard; 3,000 yards of average grade were priced at 15c per yard; 1,000 yards of the lowest grade were priced at 12c per yard; and the remaining 600 yards of small remnants were marked at 5c per yard. The next periodic inventory showed 400 yards of the 25c goods and 2,000 yards of the 15c goods on hand; all other goods had been sold. At what cost should the inventory be shown?

## PROBLEMS

8-1. The Bloom Co. adjusted and closed its books at the end of 1953, the summary of 1953 activities showing a loss of \$1,215. The following errors relating to 1953 are discovered upon an audit of the books of the company made in March, 1954:

- (a) Merchandise, cost \$1,650, was recorded as a purchase at the end of 1953 but was not included in the ending inventory since it was received on January 9, 1954.
- (b) Merchandise, cost \$315, was received in 1953 and included in the ending inventory; however, the entry recording the purchase was made on January 4, 1954, when the invoice was received.
- (c) 500 units of Commodity Z, costing \$6.15 per unit, were recorded at a per unit cost of \$1.65 in summarizing the ending inventory.
- (d) Goods in the hands of a consignee costing \$6,000 were included in the inventory; however, goods costing \$1,450 had been sold as of December 31, and the sale was not recorded until January 31 when the consignee made a remittance of \$1,750 on this item.
- (e) Merchandise, cost \$368, sold at \$490 and shipped on December 31, 1953, was not included in the ending inventory; however, the sale was not recorded until January 12, 1954, when the customer made payment on the sale.

*Instructions:* (1) Calculate the corrected profit or loss for 1953.

(2) Give the entries that are required in 1954 in correcting the accounts.

8-2. The Wallace Corp. record of merchandise follows:

December 1	(Inventory	2,000 units @ \$5 00
7	Purchase	5,000 units @ 6 00
15	Purchase	3,500 units @ 6 50
21	Purchase	4,000 units @ 6 00
30	Purchase	2,000 units @ 6 50

Sales for December totaled 14,000 units.

*Instructions:* Calculate the cost to be assigned to the ending inventory by each of the following methods: (a) fifo; (b) lifo; (c) weighted average.

8-3. The record of Commodity K for the Aaron Manufacturing Co. shows:

Balance:	January 1	400 units at \$21 00
Purchases:	January 3	450 units at 21 50
	12	150 units at 22 50
	24	100 units at 21 50
Sales:	January 2	300 units at 27.50
	18	250 units at 28 00
	29	100 units at 29 50

*Instructions:* Calculate the inventory balance and the gross profit on sales for the month on each of the following bases:

- (1) First-in, first-out. Perpetual inventories are maintained and costs are charged out currently.
- (2) First-in, first-out. No book inventory is maintained.
- (3) Last-in, first-out. Perpetual inventories are maintained and costs are charged out currently.
- (4) Last-in, first-out. No book inventory is maintained.
- (5) Moving average. Perpetual inventories are maintained.
- (6) Weighted average.

8-4 The Coler Co. records report sales and purchases of Article M as follows:

	Purchases		Sales
	Units	Unit Cost	Units
January 6 .....			100
January 7 .....	200	\$ 4.20	
January 10 .....			150
January 12 .....	100	4.35	
January 15 .....			200
January 20 .....	200	4.40	
January 27 .....			100

Article M inventory on hand on January 1 consisted of 300 units that cost \$1,215.

*Instructions:* Calculate the cost of goods sold for January and the cost of the ending inventory balance assuming use of:

- (1) The first-in, first-out basis.
- (2) The last-in, first-out basis, costs calculated at time of sale.
- (3) The last-in, first-out basis, costs calculated at end of month.
- (4) Weighted moving average basis, costs calculated at time of sale.
- (5) Weighted average basis, costs calculated at end of month.

8-5. The Browning Store sells a single commodity. Purchases, sales, and expenses for January, February, and March are summarized below:

		Purchases		
		Units	Cost Per Unit	
January	1 15 .....	1,500	\$ 6.00	
	16-31 .....	1,300	6.50	
February	1-15 .....	2,000	6.50	
	16-28 .....	1,000	7.00	
March	1 15 .....			
	16-31 .....	1,000	6.25	

		Sales		Operating Expenses
		Units	Sales Price Per Unit	
January .....	2,000	\$ 8.50		\$ 3,700
February .....	2,200	9.00		4,100
March .....	1,500	9.10		2,950

*Instructions:* Prepare a comparative income statement summarizing operations for the months of January, February, and March for each case below:

- (1) Assume that monthly inventories are calculated at cost on a first-in, first-out basis.
- (2) Assume that monthly inventories are calculated at cost on a last-in, first-out basis.
- (3) Assume that monthly inventories are calculated at cost on a weighted average basis. (Unit costs are calculated to the nearest cent.)

8-6. The Belmont Manufacturing Co. manufactures a single commodity. A summary of its activities for 1953 follows:

	No. of Units	Amount
Sales.....	30,000	\$ 174,000
Raw Materials Inventory 1/1 .....		16,000
Goods in Process Inventory 1/1 .....		20,000
Finished Goods Inventory 1/1. ....	6,000	24,000
Raw Materials Inventory 12/31. ....		12,000
Goods in Process Inventory 12/31 .....		25,000
Finished Goods Inventory 12/31. ....	8,000	—
Raw Materials Purchases .. .....		64,000
Direct Labor.....		45,000
Manufacturing Expenses .. .....		36,000
Selling, General, and Administrative Expenses.....		20,000

Instructions: (1) Prepare a schedule summarizing the cost of goods manufactured for the year. Indicate on the schedule the number of units completed for the year and the cost per unit of goods finished.

(2) Prepare an income statement for the year on each of the following assumptions relating to the transfer of cost from finished goods to cost of goods sold: (a) first-in, first-out, (b) last-in, first-out, (c) weighted average.

8-7. The Erdman Manufacturing Company produces one principal product. The income from sales of this product for the year 1953 is expected to be \$200,000. Cost of goods sold will be as follows:

Materials used .....	\$ 40,000
Direct labor .....	60,000
Fixed overhead.....	20,000
Variable overhead .....	30,000

The company realizes that it is facing rising costs and in December is attempting to plan its operations for the year 1954. It is believed that if the product is not redesigned, the following results will be obtained:

Material prices will average 5% higher and rates for direct labor will average 10% higher. Variable overhead will vary in proportion to direct labor costs. If sale price is increased to produce the same rate of gross profit as the 1953 rate, there will be a 10% decrease in the number of units sold in 1954.

If the product is redesigned according to suggestions offered by the sales manager, it is expected that a 10% increase can be obtained in the number of units sold with a 15% increase in sale price per unit. However, change in the product would involve several changes in cost.

A different grade of material would be used, but 10% more of it would be required for each unit. The price of this proposed grade of material has averaged 5% below the price of the material now being used, and that 5% difference in price is expected to continue for the year 1954. Redesign would permit a change in processing method enabling the company to use less-skilled workmen. It is believed that the average pay rate for 1954

would be 10% below the average for 1953 because of that change. However, about 20% more labor per unit would be required than was needed in 1953. Variable overhead is incurred directly in relation to production; it is expected to increase 10% because of price changes and to increase an additional amount in proportion to the change in labor hours.

*Instructions:* Assuming the accuracy of these estimates, prepare statements showing the prospective gross profit if:

- (1) The same product is continued for 1954.
- (2) The product is redesigned for 1954. (A.I.A. adapted)

8-8. During a certain period, the Perfect Plate Glass Co. cast and rolled about 850,000 square feet of glass. The product, after cutting up in order to eliminate defects, was priced for sale as follows:

Size No. 1 .....	28 cents per square foot
Size No. 2 .....	24 cents per square foot
Size No. 3 .....	22 cents per square foot
Size No. 4 .....	20 cents per square foot
Size No. 5 .....	14 cents per square foot
Size No. 6 .....	5 cents per square foot

Any product below No. 6 was returned to process and remelted.

As may be seen, the selling price for a given quality varied with the size, the largest perfect sheets selling for the highest price per square foot.

The total cost of materials, manufacture, grinding, polishing, cutting, and sorting, including factory expense, was \$120,807.

The inventories, in square feet, were:

	Opening	Closing
Size No. 1 .....	10,000	12,860
Size No. 2 .....		11,000
Size No. 3 .....	10,000	23,000
Size No. 4 .....		6,000
Size No. 5 .....		
Size No. 6 .....		2,000

The sales, at list selling prices, were:

Size No. 1 .....	\$ 30,240
Size No. 2 .....	36,480
Size No. 3 .....	35,376
Size No. 4 .....	21,100
Size No. 5 .....	9,030
Size No. 6 .....	2,300

*Instructions:* Calculate in detail and in total the value of the ending inventory. Assume that manufacturing costs are assigned to products according to their relative sales value. (A.I.A. adapted)

**Inventories****Special Valuation Procedures****INVENTORY VALUATION AT COST OR MARKET, WHICHEVER IS LOWER**

Changes in the market may result in a current productive or replacement cost for inventories that is less than original acquisition cost and may suggest sales prices that are less than those that were anticipated on the original purchase of goods. Such circumstances are considered to justify departures from cost and the use of such lower replacement values in inventory valuation. Recognition of inventory declines in inventory pricing identifies the loss with the period in which it was incurred; goods are reported at a value that measures the contribution carried into the next period, a cost that may be assigned to revenue of the future without committing the future to a loss upon the sale of the inventory. This practice is referred to as valuation at "cost or market, whichever is lower," or valuation at "the lower of cost or market."

Replacement cost or market is generally interpreted to be the present expenditure required for the acquisition or the reproduction of the goods. Such cost would imply all acquisition elements usually associated with cost. The Revenue Act supplies the following definition: "Upon ordinary circumstances and for normal goods in inventory, 'market' means the current bid price prevailing at the date of inventory for the particular merchandise in the volume in which it is usually purchased by the taxpayer."

**LIMITATIONS IN ARRIVING AT MARKET VALUE**

Certain limitations have been recommended in establishing a replacement cost or market for the purpose of arriving at a valuation in terms of the lower of cost or market. The Committee on Accounting Procedure of the American Institute of Accountants suggests the following:

As used in the phrase "lower of cost or market," the term "market" means current replacement cost (by purchase or by reproduction, as the case may be) except that:

- (1) Market *should not exceed* the net realizable value (i.e., estimated selling price in the ordinary course of business less reasonably predictable costs of completion and disposal) and

- (2) Market should not be less than net realizable value reduced by an allowance for an approximately normal profit margin.<sup>1</sup>

The foregoing sets a ceiling for the market value to be used at sales price less costs of completion and disposal and a floor for such market at sales price less both the costs of completion and disposal and the normal profit margin. The ceiling limitation is necessary because, regardless of the apparent replacement cost, the inventory should not be valued at more than its net realizable value, that is, the estimated selling price less the cost of completion and disposal; failure to observe such limitation would result in charges to future periods in excess of the utility carried forward and ultimate loss on the sale of the inventory. The floor limitation is necessary because, regardless of the apparent replacement cost, there is no need to value an inventory at less than the net realizable cost minus a normal profit; valuation at the floor still assures the recognition of a normal profit on the sale of the inventory in future periods.

To illustrate the application of the foregoing, assume the following for the sale of a certain commodity:

Selling expense	\$20
Normal profit	15

Assuming estimated sales price, cost, and replacement cost as indicated below, the lower of cost or market as limited by the foregoing concepts is found in each case as follows:

	ESTIMATED SALES PRICE	COST	MARKET			LOWER OF COST OR MARKET*
			FLOOR (Estimated Sales Price Less Selling Expenses and Normal Profit)	CEILING (Estimated Sales Price Less Selling Expenses)	REPLACEMENT COST	
(a)	75	<u>50</u>	40	55	60	50
(b)	75	<u>50</u>	40	55	<u>45</u>	45
(c)	75	50	<u>40</u>	55	<u>35</u>	40
(d)	65	50	<u>30</u>	<u>45</u>	55	45
(e)	65	50	30	<u>45</u>	<u>40</u>	40
(f)	65	50	<u>30</u>	45	<u>25</u>	30

\*The value underlined is the value that is applicable for purposes of the cost or market determination

(a) The cost is less than the replacement cost; it is also less than the net realizable value  $$(75 - \$20)$ ; therefore the cost price is used.

(b) The replacement cost is less than the cost; also the replacement cost is less than the realizable value  $$(75 - \$20)$  and is more than the realizable value minus a normal profit margin  $$(75 - \$20 - \$15)$ ; therefore the replacement cost is used.

<sup>1</sup>Accounting Research Bulletin No. 29, "Inventory Pricing," July, 1947 (New York, American Institute of Accountants), p. 239.

(c) The replacement cost is less than the cost; but the replacement cost is also less than the realizable value minus the normal profit margin (\$75 - \$20 = \$15); therefore the market value is considered to be \$40, the realizable value less the normal profit margin. The replacement cost of \$35 is actually less than the known value of the asset to the business, hence the higher value is used.

(d) The net realizable value (\$65 - \$20) is less than either the replacement cost or the cost. As the market value should not be considered more than the net realizable value, this value is used.

(e) and (f) These cases are the same as (b) and (c) respectively.

### METHODS OF APPLYING LOWER OF COST OR MARKET PROCEDURE

The rule of the lower of cost or market is normally applied to each inventory item in arriving at the inventory valuation. Under certain circumstances, application of this rule to major inventory groupings or to the inventory as a whole may be considered to offer sufficiently conservative valuation. For example, assume that balanced stocks of raw materials are on hand, some of which have gone down and others up. When such raw materials are used as components of a single finished product, a loss in the value of certain materials may be considered to be counterbalanced by the gains that are found in other materials, and the lower of cost or market as applied to this category as a whole may provide an adequate measure of the utility of the goods. The illustration below shows the use of the valuation procedure of cost or market, whichever is lower, as applied to (1) individual inventory items, (2) independent sections of the inventory, and (3) inventory as a whole.

	QUANTITIES	UNIT COST	MARKET	TOTALS		COST OR MARKET WHICH EVER IS LOWER		
				COST	MARKET	(1) If Applied to Individual Inventory Items	(2) If Applied to Inventory Sections	(3) If Applied to Inventory as a Whole
Material A	4,000	\$1 20	\$1 10	\$ 4,800	\$ 4,400	\$ 4,400		
Material B	5,000	50	40	2,500	2,000	2,000		
Material C	2,000	1 00	1 10	2,000	2,200	2,000		
				\$ 9,300	\$ 8,600		\$ 8,600	
Goods in Process A.	10,000	1 60	1 40	\$16,000	\$14,000	14,000		
Goods in Process B.	12,000	1 00	1 20	12,000	14,400	12,000		
				\$28,000	\$28,400		28,000	
Finished Goods A	3,000	2 00	1 70	\$ 6,000	\$ 5,100	5,100		
Finished Goods B.	2,000	1 50	1 60	3,000	3,200	3,000		
				\$ 9,000	\$ 8,300		8,300	
				\$46,300	\$45,300			\$45,300
Inventory Valuation						\$42,500	\$44,900	\$45,300

In valuing manufacturing inventories, raw materials declines are applicable to the raw materials inventory and also to raw materials found in goods in process and finished goods. Goods in process and finished goods valuations are also affected by declines in labor and overhead costs; but declines in the latter costs are usually ignored when relatively minor.

The method that is chosen for application of the rule of cost or market, whichever is lower, should be applied consistently on successive inventory valuations. A reduced market value assigned to goods at the end of a period is considered its cost for purposes of inventory valuation in subsequent periods; cost reductions, thus, would not be restored in subsequent accountings.

**EVALUATION OF  
LOWER OF COST OR  
MARKET PROCEDURE**

Inventory valuation at the lower of cost or market is advocated on the grounds that it is a conservative measure in support of the doctrine that the accountant should anticipate no profits but should provide for all losses. But a number of objections are raised to this valuation procedure. It has been charged that such valuation produces inconsistencies in the measurements of both the position and the progress of the enterprise. Market decreases are recognized; increases are not. With changes in the direction of market prices, a cost or market valuation at the end of one year may be followed by a strictly cost valuation the next. Furthermore, serious income distortions may emerge from assumptions as to a lower future market that fail to materialize. To illustrate, assume that activities summarized in terms of cost would provide the following results over a three-year period:

	<u>1952</u>	<u>1953</u>	<u>1954</u>
Sales	\$200,000	\$225,000	\$250,000
Cost of goods sold:			
Beginning inventory	\$ 60,000	\$ 80,000	\$127,500
Purchases	120,000	160,000	90,000
	<u>\$180,000</u>	<u>\$240,000</u>	<u>\$217,500</u>
Less ending inventory	50,000	127,500	112,500
	<u>100,000</u>	<u>112,500</u>	<u>92,500</u>
Gross profit	\$100,000	\$112,500	\$125,000
Expenses	80,000	90,000	100,000
	<u>\$ 20,000</u>	<u>\$ 22,500</u>	<u>\$ 25,000</u>
Net income	20,000	22,500	25,000
Rate of income to sales	<u>10%</u>	<u>10%</u>	<u>10%</u>

Assume, now, that estimates as to the future utility of ending inventories suggested market values as follows:

<u>1952</u>	<u>1953</u>	<u>1954</u>
\$ 75,000	\$110,000	\$ 92,500

Use of the lower of cost or market for inventory valuation would provide the following periodic results:

	1952	1953	1954
Sales	\$200,000	\$225,000	\$250,000
Cost of goods sold:			
Beginning inventory	\$ 60,000	\$ 75,000	\$110,000
Purchases	120,000	160,000	90,000
	<u>\$180,000</u>	<u>\$235,000</u>	<u>\$200,000</u>
Less ending inventory	75,000 105,000	110,000 125,000	92,500 107,500
Gross profit	\$ 95,000	\$100,000	\$142,500
Expenses	80,000	90,000	100,000
Net income	<u>\$ 15,000</u>	<u>\$ 10,000</u>	<u>\$ 42,500</u>
Rate of income to sales	<u>7 5%</u>	<u>4 4%</u>	<u>17 0%</u>

Reduction of inventories below cost serves to reduce the profit of the period in which the reduction is made and to increase the profit of the subsequent period. In the examples just given, total profit for the three-year period is the same under either set of calculations. But the reduction of inventories to lower market values as a result of reduced sales prices anticipated for 1953 and 1954 served to reduce the incomes for 1952 and 1953 and to increase the income for 1954. The fact that inventory cost reductions were not justified resulted in profit determinations that varied considerably from those that might reasonably be expected to obtain from a trend of increasing sales and costs that normally vary with sales volume. Application of the valuation procedure of cost or market, whichever is lower, calls for analysis of underlying conditions and care in the determination of the values to be used.

#### **APPLICATION OF LOWER OF COST OR MARKET IN THE ACCOUNTS**

If beginning and ending inventories are reported on the income statement at amounts that are less than cost as a result of inventory pricing at cost or market, whichever is lower, the cost of goods sold determination will reflect both the cost of goods sold and the effects of the recognition of fluctuations in inventory replacement values. Two procedures are available in developing operating data so that the results of normal activities and the effects of market fluctuations in inventory values may be separately set forth. One procedure calls for the periodic recognition of the effect upon profits of an ending inventory reduced to a lower valuation. A second procedure calls for the periodic recognition of the effect upon profits of both beginning and ending inventories stated on a basis that is less than cost. The illustration that follows

shows the effects of failure to distinguish between operating and market factors as compared with use of the alternate procedures indicated above. Assume ending inventories as given at the top of page 249.

	(1) Failure to Recognize Separately Effects of Fluctuations in Inventory Value	
<b>December 31, 1953:</b>	<b>Merchandise Inventory.....</b>	<b>52,000</b>
<b>Entries to record ending inventory.</b>	<b>Profit and Loss.....</b>	<b>52,000</b>
<hr/>		
<b>Income statement for year 1953:</b>		
<b>Sales</b>		<b>240,000</b>
<b>Cost of goods sold:</b>		
Beginning inventory	50,000	
Purchases	130,000	
	<hr/>	
Cost of goods available for sale	180,000	
Deduct: Ending inventory	(lower of cost or market)... 52,000	128,000
	<hr/>	
<b>Gross profit</b>		<b>112,000</b>
<b>Operating expenses</b>		<b>100,000</b>
		<hr/>
<b>Deduct: Loss on reduction of in-</b> <b>ventory to market</b>		
<b>Net income</b>		<b>12,000</b>
<hr/>		
<b>December 31, 1954:</b>	<b>Profit and Loss.....</b>	<b>52,000</b>
<b>Entries to close opening inventory.</b>	<b>Merchandise Inventory..</b>	<b>52,000</b>
		<hr/>
<b>Entries to record ending inventory.</b>	<b>Merchandise Inventory.....</b>	<b>70,000</b>
	<b>Profit and Loss.....</b>	<b>70,000</b>
<hr/>		
<b>Income statement for year 1954:</b>		
<b>Sales</b>		<b>280,000</b>
<b>Cost of goods sold:</b>		
Beginning inventory	(lower of cost or market)... 52,000	
Purchases	163,000	
	<hr/>	
Cost of goods available for sale	215,000	
Deduct: Ending inventory	(lower of cost or market)... 70,000	145,000
	<hr/>	
<b>Gross profit</b>		<b>135,000</b>
<b>Operating expenses</b>		<b>100,000</b>
		<hr/>
<b>Deduct: Loss on reduction of in-</b> <b>ventory to market</b>		
<b>Add: Gain arising from adjustment</b> <b>in inventory allowance to</b> <b>reflect inventory at lower</b> <b>of cost or market</b>		
<b>Net income</b>		<b>35,000</b>

	December 31, 1953		December 31, 1954	
Cost		\$60,000		\$75,000
Lower of cost or market		52,000		70,000
Separate Recognition of Inventory Fluctuations				
	(2)		(3)	
	Recognition of Loss in Ending Inventory		Recognition of Effect of Fluctuations on Beginning and Ending Inventories	
Merchandise Inventory	52,000		Merchandise Inventory	60,000
Loss on Reduction of In- ventory to Market	8,000		Profit and Loss	60,000
Profit and Loss		60,000	Loss on Reduction of In- ventory to Market	8,000
			Allowance for Inventory Decline to Market	8,000
		240,000		240,000
	50,000			50,000
	130,000			130,000
	180,000			180,000
(cost)	60,000	120,000	(cost)	60,000
		120,000		120,000
		100,000		100,000
		20,000		20,000
		5,000		8,000
		12,000		12,000
Profit and Loss	52,000		Profit and Loss	60,000
Merchandise Inventory		52,000	Merchandise Inventory	60,000
Merchandise Inventory	75,000		Merchandise Inventory	75,000
Loss on Reduction of In- ventory to Market	5,000		Profit and Loss	75,000
Profit and Loss		75,000	Allowance for Inventory Decline to Market	3,000
			Gain Arising from De- crease in Allowance Re- quirement Reducing In- ventory to Lower of Cost or Market	3,000
		280,000		280,000
lower of cost or market	52,000		(cost)	60,000
	163,000			163,000
	215,000			223,000
(cost)	75,000	140,000	(cost)	75,000
		140,000		132,000
		100,000		100,000
		40,000		32,000
		5,000		
				3,000
		35,000		35,000

In the first example, cost of goods sold each year reflects both goods sold and the effects of inventory declines. In the second example, the ending inventory for each year is reported on the basis of cost, and the decline identified with this balance receives separate recognition. Beginning inventories are reported in terms of the inventory cost utility carried into the current period, a lower of cost or market value for a preceding period thus being used as the beginning cost in measuring cost of goods sold. In the third case above, cost of goods sold is reported in terms of original cost. Inventory fluctuations are screened out of this section and the net effect of such fluctuations in beginning and ending inventories is reported separately as a loss or a gain. An inventory valuation account is adjusted periodically to the balance that is required in bringing the ending inventory down to a lower of cost or market basis. Declines in an ending inventory that exceed those identified with a beginning balance call for an increase in the valuation account and a charge to a loss account; declines in an ending inventory that are less than those identified with a beginning balance call for a decrease in the valuation account and the recognition of a gain arising from the changed allowance requirement.

One frequently finds inventories valued at the lower of cost or market with no separate analysis of the effect of inventory fluctuations in the accounts as in (1) above. Such practice, while it may involve some distortion, is normally the most convenient procedure. Periodic recognition of the loss on the ending inventory as in (2) above offers a satisfactory approach to matching sales with the costs that may be considered applicable thereto while providing a separate analysis of current market declines. The allowance procedure with recognition of the net effect of inventory price fluctuations, method (3) above, finds support on the following grounds:

- (1) Price fluctuations relating to the inventory of both the prior year and the current year are fully removed from the cost of goods sold section. This may be considered of particular favor when reductions in inventory replacement values are not necessarily followed by reductions in inventory sales prices; sales is charged with a beginning inventory at cost.
- (2) When a system of perpetual inventories is maintained, recognition of only the net periodic fluctuations and their reflection through the valuation account avoids the need for detailed changes in subsidiary inventory records.

**DETERIORATED  
GOODS, TRADE-INS,  
REPOSSESSIONS**

A decline in market conditions may not be the only factor suggesting the use of values that are less than cost for inventories. There may be merchandise items that are deteriorated, obsolete, damaged,

or shopworn, and other goods obtained as trade-ins or repossessions and in second-hand condition. It may be desirable to value such goods at their net realizable value, that is, their estimated sales value less the costs to be incurred in their sale, or on an even more conservative basis, at such realizable value less the normal profit margin that is realized on sales. Inventory values carried into future fiscal periods, then, are related to the utility of the goods carried forward. When the cost shrinkages mentioned above are significant, they should not be buried in the cost of goods sold section but preferably should be reported under appropriate expense headings.

**LOSSES ON PURCHASE COMMITMENTS**

Commitments are frequently made for the future purchase of goods at fixed prices. When price declines take place subsequent to such commitments, losses should be recognized currently in the same manner as losses related to goods on hand. Losses are thus assigned to the period in which the decline took place, and future periods are charged with no more than the utility they receive. Current loss recognition would not be appropriate in those instances where commitments provide for price adjustments, where hedging serves to prevent possible losses, or where declines do not suggest corresponding sales price reductions.

**VALUATION AT MARKET**

In some instances, parts of an inventory are recorded at sales price less cost to sell even though this may exceed cost. Such valuation must be regarded as exceptional treatment since gains are anticipated prior to time of sale. Valuation at sales price less selling costs can be justified only when it is a regular trade practice and arises from either (1) certain market conditions that make possible the immediate sale of inventories at the assigned values, or (2) a ready market plus inability to arrive at reasonable assignments of costs. For example, inventories such as gold, silver, and certain other metals may be accorded this exceptional treatment in view of their immediate marketability at a fixed market price. Similar treatment may be accorded a farmer's inventory in view of the difficulty of arriving at a satisfactory cost.

It may be pointed out that the Committee on Accounting Procedure of the American Institute of Accountants in Bulletin No. 29 on "Inventory Pricing" sanctions the departure from cost and the recognition of realizable values in the accounts for the special instances mentioned.<sup>1</sup> Departures from cost are also accepted for tax purposes

<sup>1</sup>*Accounting Research Bulletin No. 29, "Inventory Pricing,"* July, 1947 (New York: American Institute of Accountants), p. 239.

in special cases. For example, dealers have been permitted to report inventories in the form of securities, cotton, grain, and other commodities at cost, the lower of cost or market, or at market value. The method elected must be used each period. In the case of farmers, the *farm-price method* is accepted for tax purposes; this method provides for inventory valuation in terms of current market price less direct costs of marketing. The farm-price method, if adopted, must be applied consistently to the entire inventory with the exception of livestock. In the case of the latter inventory, the *unit-livestock-price method* may be used. This is an adaptation of the standard cost method, providing for a classification of animals and the application to each class of a standard unit price representing the normal costs of production. For example, if a cattle raiser estimates a cost of \$75 to produce a calf and \$50 a year to raise the calf to maturity, animals would be classified and valued as follows: calves, \$75; yearlings, \$125; two-year olds, \$175; mature animals, \$225.

**UNCOMPLETED  
CONTRACTS—PROFIT  
RECOGNITION BASED  
ON DEGREE OF  
COMPLETION**

A special valuation problem is encountered in those instances where a contractor engages in certain construction work requiring months or perhaps years for completion and such projects are found in various degrees of completion at the end of the contractor's fiscal period. The contractor may carry such "goods in process" at cost until date of completion, deferring any recognition of profit on the contract until it is completed and formally accepted by the purchaser and the full profit can be calculated. On the other hand, there is strong support here for a valuation procedure that will enable the contractor to accrue the profit over the life of the contract in some equitable and systematic manner. For example, assume the construction of a ship over a period of three years. Costs of construction are \$850,000; the contract price is \$1,000,000. If the profit recognition is to await completion and delivery, the third year will receive full recognition of the profit of \$150,000 even though only a small part of the earnings may be attributable to productive effort in this period. Previous periods receive no credit for their productive efforts; as a matter of fact, they may have been penalized through the absorption of selling, general and administrative, and other overhead costs relating to construction in progress but not considered chargeable to the construction inventory balance. A means of identifying the profit here with the periods that were responsible for its ultimate realization might well be sought.

A satisfactory approach to periodic profit recognition on long-term construction contracts is usually achieved by use of the *percentage of completion* method. Estimates of the percentage of completion of a project are obtained from qualified engineers and architects. Such estimates are applied to total contract price, and costs incurred to date are subtracted from estimated revenue in arriving at current earnings. Instead of arriving at estimates of completion by reference to the work done, the degree of completion is frequently developed by comparing costs already incurred with the total estimated costs involved in the project. The percentage that costs incurred bear to total estimated costs is applied to the estimated net profit on the project in developing an estimated net profit realized to date. To illustrate the latter approach, assume a contract for the construction of a dam to take place over a two-year period commencing in September, 1952, at a contract price of \$750,000. Summaries of construction progress and the estimated profit calculated on a degree of completion basis for each year follow:

1952: Contract price . . . . .		\$750,000
Less estimated cost:		
Cost to date . . . . .	\$ 50,000	
Anticipated cost to complete project. . . . .	550,000	600,000
	<hr/>	<hr/>
Estimated profit . . . . .		\$150,000
		<hr/>
Estimated profit—1952:		
50,000/600,000 × \$150,000. . . . .		\$ 12,500 <sup>1</sup>
		<hr/>
1953: Contract price . . . . .		\$750,000
Less estimated cost:		
Cost to date . . . . .	\$450,000	
Anticipated cost to complete. . . . .	175,000	625,000
	<hr/>	<hr/>
Estimated profit. . . . .		\$125,000
		<hr/>
Estimated profit to date:		
450,000/625,000 × \$125,000. . . . .		\$ 90,000
Less profit recognized in 1952. . . . .		12,500
		<hr/>
Estimated profit—1953 . . . . .		\$ 77,500
		<hr/>

<sup>1</sup>The same estimated profit is developed if the relationship of costs incurred to total estimated costs is applied to the total contract price in arriving at the contract price considered earned, and this balance is then reduced by costs incurred to date. Calculations in the example would be:

Contract price considered earned: 50,000/600,000 × \$750,000	\$62,500
Cost to date . . . . .	50,000
	<hr/>
Estimated profit—1952 . . . . .	\$12,500
	<hr/>

1954: Contract price.....		\$ 750,000
Less total cost:		
Cost of prior periods.....	\$ 450,000	
Current cost to complete.....	167,500	617,500
		<hr/>
Profit on construction.....		\$ 132,500
Less profits recognized to date (\$12,500 + \$77,500) .....		90,000
		<hr/>
Estimated profit—1954.....		\$ 42,500
		<hr/>

In the above example, the deferral of profit recognition until project completion would have resulted in a profit of \$132,500 in 1954. Recognition of profits on the basis of degree of completion is compared with recognition of profits only upon project completion in the series of entries below based upon the facts in the example just given.

Transaction	Periodic Profit Recognition in Terms of Degree of Completion	Profit Recognition Only Upon Project Completion
<b>1952:</b>		
Costs of construction.	Construction in Process . . . . 50,000 Materials, Cash, etc. . . . . 50,000	Construction in Process . . . . 50,000 Materials, Cash, etc. . . . . 50,000
Advances from customer on contract.	Cash . . . . . 60,000 Customer Advances . . . . 60,000	Cash . . . . . 60,000 Customer Advances . . . . 60,000
Recognition of profit for year	Construction in Process . . . . 12,500 Recognized Profit on Long-Term Construction . . . . 12,500	
<b>1953:</b>		
Costs of construction.	Construction in Process . . . . 400,000 Materials, Cash, etc. . . . . 400,000	Construction in Process . . . . 400,000 Materials, Cash, etc. . . . . 400,000
Advances from Customer on Contract	Cash . . . . . 425,000 Customer Advances . . . . 425,000	Cash . . . . . 425,000 Customer Advances . . . . 425,000
Recognition of profit for year	Construction in Process . . . . 77,500 Recognized Profit on Long-Term Construction . . . . 77,500	
<b>1954:</b>		
Costs of construction in completing contract.	Construction in Process . . . . 167,500 Materials, Cash, etc. . . . . 167,500	Construction in Process . . . . 167,500 Materials, Cash, etc. . . . . 167,500

Transaction	Periodic Profit Recognition in Terms of Degree of Completion	Profit Recognition Only Upon Project Completion
Completion of contract: (a) Recognition of profit for year.	Construction in Process      42,500 Recognized Profit on Long-Term Construction      42,500	Construction in Process ..    132,500 Profit on Construction..      132,500
(b) Advances including payment in settlement.	Cash ...    265,000 Customer Advances      265,000	Cash .    265,000 Customer Advances      265,000
(c) Transfer of completed projects	Customer Advances      750,000 Construction in Process      750,000	Customer Advances      750,000 Construction in Process      750,000

It should be observed that the practice of recognizing a profit on a job still in process is a departure from standard inventory valuation procedures and should be applied only when all of the circumstances are considered to warrant such exceptional treatment. Estimates of the degree of project completion should be developed from data supplied by qualified architects and engineers. When reliable estimates cannot be obtained or when possible future contingencies may operate to eliminate what appear to be accruing profits, conservatism would require the deferral of profit recognition until project completion.

Whatever method is employed in the accounts, full disclosure should be made on the statements of the method of valuation employed as well as the full implications of such valuation. When sales or transfers of partnership interests or of capital stock are involved, the status of contracts in progress and the degree of recognition of profits on such contracts in the asset and the capital sections assume vital significance.

When a contractor does not have title to buildings, improvements, etc., in progress, these items, while not qualifying as "inventory," nevertheless call for the use of valuation procedures as described and presentation as assets under appropriately descriptive headings until settlement is made with the customer upon contract completion.

When a building, installation, or construction contract covers more than one year, federal income tax requirements permit the taxpayer to elect to recognize profits in terms of percentage of completion over the life of the project or to recognize profits on the entire job in the year when the contract is completed and accepted. Salaries, taxes, and other expenses not directly attributable to the contract must be deducted in the year in which incurred. Consistent application of the method of accounting chosen is required for tax purposes, a change from the percentage of completion basis to the completed basis, or vice versa, requiring special permission.

## QUESTIONS

1. Define "market" for purposes of inventory valuation at "cost or market, whichever is lower."

2. Objection has been raised to the use of the term "market" in the phrase "cost or market, whichever is lower." Can you suggest a more satisfactory term?

3. Describe how one would arrive at market ceiling and floor in developing a lower of cost or market value.

4. (a) Describe the application of the lower of cost or market valuation to (1) each inventory item, (2) inventory sections, (3) the inventory as a whole. (b) State the conditions that would suggest the use of each of these methods.

5. What conditions might suggest caution in the application of the rule of cost or market, whichever is lower? Why?

6. (a) State two procedures that might be used in the accounts for the separate recognition of inventory fluctuations arising from inventory valuation at the lower of cost or market. (b) What is the alternative to such separate recognition? (c) Would you recommend such special procedures in the accounts? Why?

7. What treatment would you recommend when serious loss seems to be indicated in connection with certain purchase commitments outstanding at the end of the period? Give reasons for your answer.

8. What factors might suggest inventory valuation at amounts in excess of cost?

9. At the end of the fiscal period, the inventory of Western Products Co. includes a number of special orders in process being produced on a cost-plus basis. Would you permit the recognition of any profit on such goods? If so, how would you arrive at the profit to be recognized and what procedure would you follow in the accounts?

10. How would you suggest that repossessed goods be valued? Give reasons for your proposal.

11. (a) Describe inventory valuation for crops by the farm-price method; (b) Describe inventory valuation for livestock by the unit-livestock price method.

12. (a) Describe the percentage of completion method for recognition of profits on long-term construction contracts. (b) What problems are involved in the application of this method?

13. The Hauser Construction Co. engages in a variety of construction work as an independent contractor. Profit is recognized as cash is received from customers by an entry as follows:

Cash .....	100,000	
Customer Advances .....		70,000
Profit on Construction .....		30,000

Comment on this procedure.

## EXERCISES

1. The Martin Supply Store uses the first-in, first-out method in calculating cost of goods sold for the three products that it handles. Inventories and purchases of these products during January and the market price of these products on January 31 are as follows:

	Commodity A	Commodity B	Commodity C
Inventory, Jan. 1	1,000 units @ \$6.00	3,000 units @ \$10.00	4,500 units @ \$1.00
Purchases, Jan. 1-15	3,000 units @ 6.50	5,000 units @ 10.50	2,000 units @ 1.20
Jan. 16-31	1,000 units @ 7.00		
Inventory, Jan. 31	2,000 units	3,000 units	4,000 units
Market, Jan. 31	\$7.50 per unit	\$10.00 per unit	\$1.15 per unit

Determine: (a) the cost of goods sold for January; (b) the cost of the inventory at the end of January; (c) the balance to be provided by means of a valuation allowance to reduce the inventory as of January 31 to a basis of cost or market, whichever is lower as applied to individual items.

2. The Barstow Company has 10,000 units of Commodity C on hand. Cost, selling expenses, and normal profit on the sale of a unit are reported below. Give the inventory value in terms of lower of cost or market for each set of assumptions listed; floor and ceiling limitations are to be applied in arriving at market.

	Commodity C	Per Unit
Cost		\$ 60
Selling expenses		20
Normal profit		15

	Estimated Sales Price	Current Replacement Cost
(a)	\$90	\$75
(b)	90	65
(c)	90	50
(d)	85	70
(e)	85	55
(f)	85	45
(g)	75	55
(h)	75	50
(i)	75	35

3. The Morse Company summarizes inventory data at the end of 1953 and 1954 as follows:

	1953	1954
Invoice cost	\$26,000	\$30,000
Lower of cost or market	23,500	28,000

What entries are required (a) at the end of 1953 in recording the ending inventory and (b) at the end of 1954 in closing the beginning inventory and recording the ending inventory, assuming each of the following accounting procedures:

- (1) The company calculates cost of goods sold in terms of inventories at the lower of cost or market without separate recognition of the effect of inventory market fluctuations.
- (2) The company makes periodic recognition of the loss in the ending inventory resulting from valuation at the lower of cost or market.
- (3) The company makes periodic recognition of the effects of market fluctuation identified with beginning and ending inventories through valuation at the lower of cost or market.

4. Phillip Motor Company records automobiles that are repossessed at a value that will permit the company to show a 25% gross profit on cost upon their resale. In January an automobile was repossessed that had an estimated resale value of \$1,000 after reconditioning costs estimated at \$150. At what value should the automobile be taken into the inventory?

5. The Whitney Construction Company recognizes profits on long-term construction periodically in the proportion that annual costs bear to total estimated costs of the project. Costs incurred on project #18 52 and remaining costs estimated to complete the project as summarized at the end of each year are listed below. The contract price of the project is \$250,000.

	<u>Costs</u>	<u>Estimated Remaining Costs</u>
1952 .....	\$ 60,000	\$140,000
1953 .....	120,000	45,000
1954 .....	47,500	-

What profit would be recognized by the Whitney Construction Company each year?

6. The Allen Manufacturing Co. has the following items in its inventory on December 31, 1953:

	<u>QUANTITIES</u>	<u>UNIT COST</u>	<u>MARKET</u>
Raw Material A	2,000	\$1 10	\$1 00
Raw Material B	7,000	2 40	2 50
Raw Material C	5,000	3 00	3 20
Goods in Process 1	8,000	3 75	3 80
Goods in Process 2	6,000	5 00	5 10
Finished Goods X	4,000	7 00	7 20
Finished Goods Y	2,500	8 00	7 50

Calculate the value of the company's inventory using cost or market, whichever is lower, assuming that this valuation procedure is applied:

- (a) To individual inventory items.
- (b) To each section of inventory.
- (c) To the inventory as a whole.

## PROBLEMS

9-1. Collins and Company carries five products. Units on hand, costs, and market prices of these products on January 31, 1953, are as follows:

	Units	Cost Per Unit	Current Market Price Per Unit
Product A. . . . .	4,300 units	\$2.00	\$1.90
B. . . . .	2,500 units	4.80	5.40
C. . . . .	5,000 units	5.00	5.20
D. . . . .	2,200 units	3.80	3.50
E. . . . .	5,600 units	1.85	1.80

*Instructions:* Prepare a statement to show the calculation of the inventory for statement purposes on the basis of cost or market, whichever is lower.

9-2. The inventory in Department #1 of the Andrews Distributors, at cost using first-in, first-out, and at market is as follows:

	Units and Costs	Current Market Price, Per Unit
Article A. . . . .	1,600 @ \$1.40 1,100 @ 1.60	\$1.55
B. . . . .	700 @ 1.85	1.70
C. . . . .	3,000 @ 1.90 1,000 @ 2.10	2.30
D. . . . .	3,000 @ .80	.70
E. . . . .	400 @ .80 600 @ .70	.75
F. . . . .	500 @ 4.00	4.50
G. . . . .	1,000 @ 1.20 1,200 @ 1.30	1.30

*Instructions:* Calculate the value of the inventory, assuming valuation on the basis of (1) cost, and (2) cost or market, whichever is lower, applied to individual inventory items.

9-3. Carson and Drews, Inc. sells three products. Inventories and purchases during January and the market prices of these goods on January 31 are as follows:

	Commodity A	Commodity B	Commodity C
Inventory, Jan. 1 . . .	150 units @ \$70	180 units @ \$110	60 units @ \$150
Purchases, Jan. 1-31 . .	50 units @ \$65	120 units @ \$100	50 units @ 135
Total Available for Sale . .	200	300	110
Sales, Jan. 1-31 . . . .	30 units @ \$95 120 units @ \$100	50 units @ \$175 80 units @ \$160	30 units @ \$250 20 units @ \$220
Total Sales . . . . .	150	130	50
Units on Hand, Jan. 31. . .	50	170	60
Market values per unit, Jan. 31 . . . .	\$60	\$100	\$140

Operating expenses for January were \$14,500.

*Instructions:* (1) Prepare an income statement for January, assuming that the ending inventory is valued at cost on a first-in, first-out basis.

(2) Prepare an income statement for January, assuming that the inventory is reduced to cost or market, whichever is lower, applied to individual items, and the inventory loss is reported separately on the income statement.

~~9-4~~ Arrow-Hart, Inc. carries three classes of inventory items. Inventory data as of December 31, 1953, are summarized below:

		Per Unit	
	Quantity	Cost	Replacement Cost
Class A Items			
#1.....	150	\$ 8.00	\$ 7.60
#2.....	500	10.40	9.05
#3.....	100	16.85	17.50
#4.....	125	10.00	8.40
#5.....	615	5.00	4.20
Class B Items			
#1.....	200	15.50	14.50
#2.....	305	6.00	5.00
#3.....	150	3.20	3.30
Class C Items			
#1.....	6,000	3.40	3.75
#2.....	3,200	3.10	3.25
#3.....	1,500	2.00	2.20
#4.....	10,500	1.50	1.40

*Instructions:* Prepare summaries to develop inventory valuation at the lower of cost or market, assuming this valuation procedure is applied:

- (1) To individual inventory items.
- (2) To individual inventory sections.
- (3) To the inventory as a whole.

~~9-5~~ The inventory for West Traders at the end of 1953 is to be recorded at the lower of cost or replacement value; however, replacement is not to exceed net realizable value nor is it to be less than net realizable value reduced by the normal profit on sale. Ending inventory data are summarized below:

	NUMBER OF UNITS	UNIT				
		COST	REPLACEMENT	ESTIMATED SALES PRICE	COST TO SELL	NORMAL PROFIT
Commodity A . . .	1,200	\$ 5.00	\$ 5.25	\$ 8.00	\$ 1.00	\$ 1.50
B . . . . .	800	4.25	4.00	6.50	.75	1.50
C . . . . .	1,000	7.50	7.75	8.50	1.25	2.00
D . . . . .	1,500	7.50	5.00	8.00	1.25	2.00
E . . . . .	1,250	10.00	9.25	14.00	1.50	2.50
F . . . . .	1,000	8.50	7.00	10.50	1.25	2.00
G . . . . .	200	6.00	2.25	3.50	1.00	1.00

*Instructions:* Develop a schedule summarizing the value of the ending inventory at cost or market values, the valuation procedure being applied to the individual items comprising the inventory.

**9-6.** Comparative income summaries for the Pleasant Company appear below. Inventories have been reflected periodically at cost.

	1951	1952	1953
Sales ..	\$60,000	\$75,000	\$80,000
Cost of goods sold:			
Beginning inventory	\$12,000	\$16,500	\$17,500
Purchases	40,000	46,000	50,000
	<u>\$52,000</u>	<u>\$62,500</u>	<u>\$67,500</u>
Less: Ending inventory	16,500	17,500	21,000
	<u>35,500</u>	<u>45,000</u>	<u>46,500</u>
Gross profit	\$24,500	\$30,000	\$33,500
Selling and general expenses	15,000	18,500	19,500
	<u>\$ 9,500</u>	<u>\$11,500</u>	<u>\$14,000</u>

An analysis discloses that replacement costs for inventories on hand at the end of each year had been as follows:

	1951	1952	1953
Inventory at market . . . . .	<u>\$13,000</u>	<u>\$16,500</u>	<u>\$21,500</u>

*Instructions:* Prepare a set of comparative income statements on each of the following assumptions:

- (1) Inventories are recorded in the cost of goods sold section on the basis of cost or market, whichever is lower.
- (2) Inventories are recorded at cost in the cost of goods sold section but at the lower of cost or market for balance sheet purposes, a charge being reported periodically on the income statement reporting the loss identified with the ending inventory.
- (3) Inventories are recorded at cost in the cost of goods sold section but at the lower of cost or market for balance sheet purposes, the effect of fluctuations in price on beginning and ending inventories being reflected as a special item on the income statement.

**9-7.** The Norris-McLean Construction Company undertakes the construction of a bridge at a contract price of \$750,000. Construction begins in 1952 and is completed in 1954. Construction transactions are summarized below:

- 1952: Construction costs incurred total \$100,000; remaining costs to complete the project are estimated at \$500,000. Collections from the public authority ordering such construction are \$75,000.
- 1953: Construction costs for the year total \$450,000; remaining costs to complete the project are estimated at \$75,000. Collections from the public authority are \$500,000.
- 1954: Construction costs in completing the project total \$65,000. Collections are made from the public authority for the balance owed.

*Instructions:* (1) Give the entries for each year that would appear on the books of the company assuming that construction profit is recognized only when the project is completed and full settlement is made.

(2) Give the entries for each year that would appear on the books of the company assuming that construction profit is recognized periodically in the proportion that costs bear to the total estimated cost of the project.

**9-8.** Walsh, Inc. began the manufacture of a single standard product in 1953 and at the end of the first year of operations prepared an income statement as follows:

Sales .....			\$270,000
Cost of goods sold:			
Materials used:			
Materials purchased.....	\$300,000		
Less: Ending inventory.....	60,000	\$240,000	
Direct labor.....		100,000	
Overhead.....		60,000	
Total manufacturing costs.....		\$400,000	
Deduct: Goods in process inventory:			
Estimated 25% completed as to materials and processing costs....		100,000	
		\$300,000	
Deduct: Finished goods inventory.....		80,000	
Cost of goods sold.....			220,000
Gross profit .....			\$ 50,000
Expenses .....			35,000
Net income.....			\$ 15,000

You find that a severe decline in the price of raw materials took place at the end of 1953. In recognition of the decline, the raw materials inventory that cost \$100,000 was reported at \$60,000, its market value on December 31, and goods in process and finished goods inventory costs were developed in terms of materials charged to production on the above basis.

*Instructions:* (1) Revise the income statement to reflect actual inventory costs, the raw materials decline being recognized separately as a loss.

(2) Give the inventory values that would be reported for raw materials, goods in process, and finished goods on the balance sheet.

**9-9.** The Taylor Construction Company engages in construction work at a fixed contract price. Since the gross profit on contracts has been relatively stable, the company in 1951 began accruing income on the basis of percentage of completion. The percentage of completion on a contract is obtained by comparing the cost incurred on a contract with total estimated cost. Customers are billed as work progresses, the credit being made to Billed Revenue. Costs are accumulated in a construction costs account, which is closed at the end of the period in determining net income.

A trial balance prepared for the Taylor Construction Company on December 31, 1953, is as follows:

	Dr.	Cr.
Cash.....	\$ 35,000	
Notes receivable.....	200,000	
Accounts receivable.....	560,000	
Prepaid expenses.....	12,000	
Land for future building site.....	24,000	
Land.....	38,000	
Buildings.....	126,000	
Allowance for depreciation of buildings.....		\$ 55,000
Machinery.....	870,000	
Allowance for depreciation of machinery.....		395,000
Tools.....	30,000	
3% Bank loan, due August 1, 1954.....		500,000
Accounts payable.....		255,000
Reserve for injury claims.....		10,000
Purchase money mortgage payable May 1, 1955 ..		200,000
Common stock, stated value \$100.....		400,000
Paid-in surplus.....		40,000
Retained earnings, January 1, 1953.....		143,000
Billed revenue.....		1,385,000
Construction costs.....	1,266,000	
General and administrative expenses.....	222,000	
	<u>\$3,383,000</u>	<u>\$3,383,000</u>

Information required in the preparation of statements at the end of 1953 is summarized below:

(1) During the year work was done on contracts as follows:

Contract	Contract Price	Total Estimated Cost	Cost Incurred in 1952	Cost Incurred in 1953
A.....	\$ 600,000	\$ 450,000	\$ 180,000	\$ 265,000
B.....	500,000	360,000	90,000	180,000
C.....	750,000	560,000	420,000	150,000
D.....	240,000	175,000	— —	177,000
E.....	360,000	260,000	— —	264,000
F.....	960,000	720,000	— —	230,000
	<u>\$3,410,000</u>	<u>\$2,525,000</u>	<u>\$ 690,000</u>	<u>\$1,266,000</u>

Contracts B and F are uncompleted as of the end of the year.

- (2) The bank loan was made on August 1, 1953, and interest has not been recognized to date.
- (3) A bill for \$18,000 was received from an engineering firm for services rendered during December and has not yet been recorded; \$10,000

of this amount was applicable to Contract F and the balance to Contract G, which is still being negotiated.

- (4) Accrued office salaries of \$1,500 are not shown in the accounts.
- (5) The note receivable of \$200,000 is non-interest bearing and proceeds from its maturity in March, 1954, are to be used to purchase additional equipment.
- (6) Assume corporate income taxes to be 40% of net income.

*Instructions:* (1) Prepare working papers for accounting statements as of December 31, 1953.

(2) Prepare an income statement for 1953 with a supporting schedule reporting development of gross profit earned for 1953.

(3) Prepare a balance sheet as of December 31, 1953.

**9-10.** On the petition of the principal creditors, receivers in bankruptcy were appointed for the Wilson Sales Company on September 30, 1953. Appraisers appointed by the court took a physical inventory on the morning of October 1, 1953, finding the following merchandise on the premises:

	<u>No. of Units</u>
Commodity A:	
DeLuxe Brand	40
Special Brand	10
Standard Brand	5
Commodity B	20
Commodity C	60
	—

Accountants appointed by the receivers on October 1, 1953, found that the books had not been posted since September 15, 1953, when accounts had been prepared for the purpose of obtaining a bank loan. The trial balance on that date was as follows:

	<u>DR.</u>	<u>CR.</u>
Cash in bank	\$ 500 00	
Petty cash	100 00	
Accounts receivable	7,609 66	
Accounts receivable —assigned	12,000 50	
Notes receivable	190 00	
Notes receivable —officer	300 00	
Advances to salesmen	6,000 00	
Inventories:		
Commodity A	3,180 00	
Commodity B	360 00	
Commodity C	375 00	
Inventories —assigned	10,006 54	
Insurance, taxes, and rent prepaid to Sept. 30, 1953	1,866 66	
Life insurance policy	4,000 00	
Notes payable—president		\$ 2,000 00
Accounts payable		55,100.90
Accrued sales taxes		900.12
Capital stock		10,000 00
Deficit	21,512 66	
	\$68,001 02	\$68,001 02

On the basis of these accounts a loan of \$5,000 was obtained from the bank on the agreement that accounts receivable collections (after September 15) be deposited in a special account at the bank, amounts to be withdrawn therefrom only as approved by the bank.

Cash transactions from September 15 to 30, 1953, were as follows:

Collections:

Accounts receivable deposited in special bank account . . . .	\$ 2,005.00
Accounts receivable assigned -deposited in special bank account. . . . .	12,000.50
Note receivable. . . . .	190.00
From salesmen (to be applied against advances). . . . .	500.00
Proceeds of bank loan of \$5,000. . . . .	4,900.00
Total. . . . .	\$19,595.50

Disbursements:

President's note payable. . . . .	\$ 2,000.00
Accounts payable. . . . .	5,000.00
Sales license for year to September 30, 1954. . . . .	1,000.00
Advances to salesmen. . . . .	1,000.00
Petty expenses (paid from petty cash). . . . .	100.00
Total. . . . .	\$9,100.00

An amount of \$7,000 had been transferred from the special account to the regular drawing account as approved by the bank.

There were no purchases during the period from September 15 to September 30, 1953. Verified sales during the period, all on credit, were as follows:

	No. of Units	Price per Unit Net	Total
Commodity A:			
DeLuxe Brand. . . . .	10	\$30	\$300
Special Brand. . . . .	5	20	100
Standard Brand. . . . .	5	12	60
Commodity B. . . . .	10	15	150
Commodity C. . . . .	40	2	80
Total. . . . .			\$690

The company is liable for a 2% sales tax on the sales listed above.

The perpetual stock records showed the following goods on hand at the close of business September 15:

	No. of Units	Cost per Unit
Commodity A:		
DeLuxe Brand. . . . .	100	\$24.00
Special Brand. . . . .	40	18.00
Standard Brand. . . . .	10	6.00
Commodity B. . . . .	30	12.00
Commodity C. . . . .	250	1.50

Among the accounts payable of September 15, 1953, is a debt of \$21,007.04 to a supplier, representing two successive shipments of \$11,000.50 and \$10,006.54. The first shipment had been sold for \$12,000.50 and the customer's account pledged to the supplier as security. The second shipment had been stored in a warehouse, but the title to the goods was passed back to the supplier on September 28, 1953.

The life insurance policy (surrender value at September 15, 1953, \$2,500) was on the life of the president of the company, but it had been assigned to his wife some years ago.

The receivers expect that the bank will attempt to attach all balances at September 30, 1953, and that other creditors will assert that their claims are preferential.

*Instructions:* The attorneys appointed by the receivers request that you prepare at once a balance sheet as of September 15, 1953, on a going-concern basis, and a tentative balance sheet as of September 30, 1953, for purposes of a discussion on October 2, 1953. A report or memorandum containing full notes should accompany the balance sheets so that the attorneys may be informed as to the facts so far determined. (A.I.A. adapted)

***Inventories******Estimating Procedures in Valuation*****ESTIMATED COSTS**

In the previous chapters the valuation procedures as applied to inventories were described. The methods of arriving at cost and the procedures involved in developing a lower of cost or market value were considered. Frequently, in arriving at an inventory valuation, estimates as to inventory quantities and costs are involved. Certain widely used estimating procedures are described in this chapter. Conditions in a merchandising concern calling for estimates of inventory position, together with the procedures that are applicable under the circumstances, are discussed under (1) the gross profits method and (2) the retail inventory method. The discussion of the estimating procedures for inventories of the merchandising concern is followed by a consideration of the estimating procedures for inventories of the manufacturing unit.

**GROSS PROFITS METHOD**

Estimates of merchandise on hand may be developed by means of the *gross profits method*. Application of the gross profits method involves the reduction of sales to a cost basis through use of the company's gross profit percentage. Cost of goods sold as calculated is subtracted from the cost of goods available for sale in arriving at an estimated inventory balance.

The gross profits method of arriving at an inventory is applicable in the following instances:

- (1) When it is not possible to take a physical inventory, as in the determination of the cost of merchandise lost by fire.
- (2) When inventories are required for interim statements, or for the determination of the week-to-week or month-to-month inventory position, and the cost of taking inventories would be excessive for such purposes.
- (3) When it is desired to test or check on the reliability of the figures reported for an inventory determined by other means. Such application is referred to as the *gross profits test*.

The gross profit percentage to be used in reducing sales to a cost of goods sold balance must be a reliable measure of current sales experience. In developing a reliable rate, reference is usually made to

past gross profit rates and these are adjusted for variations that are considered to exist currently. The determination of the cost of goods sold depends upon whether the gross profit percentage is developed and stated in terms of sales or in terms of cost. The procedure to be followed in each case is illustrated in the following examples.

*Example 1—Given: Gross Profit as a Percentage of Sales.* Assume: sales are \$100,000; goods are sold at a gross profit of 40% of sales.

If gross profit is 40% of sales, then cost of goods sold must be 60% of sales:

Sales . . . . .	100%	} =	Sales . . . . .	100%
Cost of goods sold . . . . .	?		Cost of goods sold . . . . .	60%
Gross profit . . . . .	40%		Gross profit . . . . .	40%

Cost of goods sold, then, is 60% of \$100,000, or \$60,000. Goods available for sale less the estimated cost of goods sold gives the estimated cost of the remaining inventory. Assuming that the cost of goods available for sale is \$85,000 as summarized below, this balance less the estimated cost of goods sold, \$60,000, gives an estimated inventory of \$25,000:

Cost of goods available for sale:

Beginning inventory . . . . .		\$16,000
Purchases . . . . .	\$ 67,800	
Freight in . . . . .	1,500	
	<hr/>	
Gross purchases . . . . .	\$ 69,300	
Less: Purchases returns and allowances . . . . .	300	69,000
	<hr/>	
Cost of goods available for sale . . . . .		\$85,000
Deduct estimated cost of goods sold:		
Gross sales . . . . .	\$100,800	
Less: Sales returns . . . . .	800	
	<hr/>	
	\$100,000	
Cost percentage (100% - 40%) . . . . .	60%	
	<hr/>	
Estimated cost of goods sold . . . . .		60,000
	<hr/>	
Ending inventory at estimated cost . . . . .		\$25,000

*Example 2—Given: Gross Profit as a Percentage of Cost.* Assume: sales are \$100,000; goods are sold at a gross profit that is 60% of their cost.

(a) If sales are made at a gross profit of 60% of cost, then sales must be equal to the sum of cost, considered 100%, and the gross profit on cost, 60%. Sales, then, are 160% of cost:

Sales . . . . .	?	} =	Sales . . . . .	160%
Cost of goods sold . . . . .	100%		Cost of goods sold . . . . .	100%
Gross profit . . . . .	60%		Gross profit	

To find cost, or 100%, sales may be divided by 160 and multiplied by 100, or sales may simply be divided by 1.60. Cost of goods sold, then, is \$100,000 ÷ 1.60, or \$62,500. This amount is subtracted from the cost of goods

available for sale in arriving at the estimated inventory as illustrated in Example 1 above.

(b) The cost of goods sold can be developed through an alternate calculation. If sales are 60% above cost, then the cost relationship to sales must be 100/160 or 62.5%.

Sales	160%	But in terms	{ Sales	100 0%	
Cost of goods sold	100%	of sales as	Cost of goods sold	62 5%	(100/160)
		100%			
Gross profit	60%		Gross profit	37 5%	(60/160)

Cost of goods sold, then, is 62.5% of \$100,000, or \$62,500.

*Example 3—Given: Sales as a Percentage Increase Above Cost.* Assume: sales are \$100,000; goods are sold at 20% above cost. This is the same as saying that the gross profit is 20% of cost, and the answer would be developed as in Example 2 above. Sales, then, would be divided by 1.20, as in (a) above, or multiplied by .83 $\frac{1}{3}$  (100/120), as in (b) above, in arriving at the estimated cost of goods sold.

The following cases review the application of the procedures described. Assume sales of \$100,000.

Gross Profit	Cost of Goods Sold	
Gross profit on sales, 52%	\$100,000 $\times$ .48 (cost percentage)	\$48,000
Gross profit on cost, 150%	\$100,000 $\div$ 2.50 (cost + percentage markup on cost)	\$40,000
	or \$100,000 $\times$ 100/250 (relationship of cost to sales)	
Goods marked up 100% above cost	\$100,000 $\div$ 2.00 (cost + percentage markup on cost)	\$50,000
	or \$100,000 $\times$ 100/200 (relationship of cost to sales)	

Separate departmental inventories should be calculated for a business composed of several departments whose sales are made at different gross profit margins. The development of departmental inventories calls for sales, goods available, and gross profits data classified in terms of the individual departments.

The development of a series of cost of goods sold balances and resulting inventory values may be required for various purposes. For example, assume that the merchandise turnover is to be calculated for a retail store whose gross profit calculation is shown at the top of the following page.

If only these data are available, the average inventory is \$25,000. This amount is found as follows:

$$\frac{\text{Beginning inventory} + \text{Ending inventory}}{2} = \frac{\$20,000 + \$30,000}{2} = \$25,000$$

Sales. . . . .	\$500,000
Cost of goods sold:	
Inventory, January 1	\$ 20,000
Purchases	310,000
	<hr/>
Cost of goods available for sale.	\$330,000
Inventory, December 31 . .	30,000
	<hr/>
Cost of goods sold	300,000
Gross profit . . . .	\$200,000

The merchandise turnover, that is, the number of times the average inventory has been replenished during the fiscal period, is then found to be 12 times a year by the following calculation:

$$\frac{\text{Cost of goods sold}}{\text{Average inventory (using year-end balances)}} = \frac{\$300,000}{\$25,000} = 12 \text{ times}$$

A more representative average inventory and therefore a more accurate turnover analysis may be obtained from an analysis of sales and purchases and the calculation of monthly inventory balances by the gross profits method. These calculations follow:

	A PURCHASES	COST OF GOODS SOLD			L INVENTORY INCREASE OR DECREASE* (A - D)	F INVENTORY (I + L)
		B SALES	C COST PERCENTAGE	D COST OF GOODS SOLD (B × C)		
January 1						\$ 20,000
January	\$ 20,000	\$ 30,000	60%	\$ 18,000	\$ 2,000	22,000
February	20,000	30,000	60	18,000	2,000	24,000
March	20,000	30,000	60	18,000	2,000	26,000
April	20,000	30,000	60	18,000	2,000	28,000
May	30,000	40,000	60	24,000	6,000	34,000
June	30,000	40,000	60	24,000	6,000	40,000
July	30,000	60,000	60	36,000	6,000*	34,000
August	30,000	40,000	60	24,000	6,000	40,000
September	40,000	40,000	60	24,000	16,000	56,000
October	40,000	50,000	60	30,000	10,000	66,000
November	20,000	50,000	60	30,000	10,000*	56,000
December	10,000	60,000	60	36,000	26,000+	30,000
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	\$310,000	\$500,000	60%	\$300,000	\$10,000	\$476,000

The average inventory and the merchandise turnover for the year may now be calculated as follows:

$$\frac{\text{Total of inventories}}{\text{Number of inventories}} = \frac{\$476,000}{13} = \$36,615, \text{ the average inventory}$$

$$\frac{\text{Cost of goods sold}}{\text{Average inventory (using monthly balances)}} = \frac{\$300,000}{\$36,615} = 8.2 \text{ times}$$

This figure is more accurate than the turnover developed on the basis of the year-end inventories, which were unusually low and unrepresentative.

### RETAIL INVENTORY METHOD

The *retail inventory method* has been widely employed by retail concerns, particularly by department stores, as a means of obtaining, whenever desired, reliable estimates of the business unit's inventory position. When this method is employed, records of goods placed in stock are maintained in terms of costs and also at marked retail prices. The merchandise on hand may be calculated at any time at its retail price by subtracting sales for the period at retail from the total goods available for sale at retail. Cost and retail pricings of goods available for sale are used in developing the percentage that cost bears to retail, and this percentage is applied to the ending inventory at retail in arriving at an estimated inventory cost.

The determination of the estimated cost of the inventory at the end of a month by using the procedure described follows:

	AT RETAIL	AT COST
Inventory, January 1 .....	\$15,000	\$30,000
Purchases in January .....	35,000	20,000
		—
Goods available for sale .. . . .	\$80,000	\$50,000
Deduct sales for January at retail ..	25,000	—
Inventory, January 31, at retail sales price ..	\$55,000	
Inventory, January 31, at estimated cost: \$55,000 × 62½% (percentage of cost to sales price, \$50,000 ÷ \$80,000) <sup>1</sup> .. . . .		\$34,375

Use of the retail inventory method offers the following advantages:

- (1) Estimated interim inventories may be obtained without a physical count.
- (2) Where a physical inventory is actually taken for periodic statement purposes, it may be taken at retail and then converted to cost without reference to individual costs and invoices, thus saving considerable time and expense.
- (3) A check is afforded on the movement of merchandise, since a physical count of the inventory at retail should compare closely with the inventory as calculated at retail.

<sup>1</sup>Instead of calculating the percentage that total cost bears to total retail price and then applying this percentage to the ending inventory at retail, it is possible to compute the cost of the inventory by one arithmetical calculation as follows:

$$\frac{50,000}{80,000} \times \$55,000 = \$34,375.$$

A physical inventory of goods on hand is required at least once a year in support of the inventory balance to be reported on the annual statements. Relatively significant discrepancies between a physical inventory and the inventory position as derived from book calculations should be investigated. Such inquiry may lead to sources of inventory misappropriations. Retail inventory summaries should be adjusted appropriately for variations as shown by the physical count so that summaries reflect the actual status of the inventory for purposes of future inventory estimates and control.

The foregoing inventory calculation assumed that, after the goods were originally marked at retail prices, no further changes in such prices were made. Frequently, however, because of changes in the price level, changes in consumer demand, or various other reasons, original retail prices are increased or decreased. The following items must ordinarily be considered in arriving at the goods available for sale and the goods remaining on hand in the form of inventory at retail:

- (1) *Original sales price* the established sales price, including the original increase over cost variously referred to as the *markon* or *initial markup*.
- (2) *Additional markup* an increase above the original sales price.
- (3) *Markup cancellation* a reduction in the additional markup that does not decrease the sales price below the original sales price.
- (4) *Markdown* a reduction below the original sales price.
- (5) *Markdown cancellation* a reduction in the markdown that does not increase the sales price above the original sales price.

The difference between cost and retail price as adjusted for any of the changes described above is sometimes referred to as the *maintained markup*.

To illustrate the use of the data listed, assume that goods originally placed for sale are marked at 50% above cost. Certain merchandise costing \$4 a unit, then, is marked at \$6, which is termed the original sales price. This increase in cost is variously referred to as a "50% markon on cost" or a "33 $\frac{1}{3}$ % markon on sales price." In anticipation of a heavy demand for the article, the goods are subsequently increased to \$7.50. This represents an additional markup of \$1.50. At a later date the goods are reduced to \$7. This is a markup cancellation of 50 cents and not a markdown, since the retail price has not been reduced below the original sales price. But assume that goods originally marked to sell at \$6 are subsequently marked down to \$5. This represents a markdown of \$1. At a later date the goods are marked to sell at \$5.25. This is a markdown cancellation of 25 cents

and not a markup, since the retail price does not exceed the original sales price.

In determining the merchandise on hand at retail sales price without a physical inventory, a record of each of the foregoing adjustments is required, and the following summary is prepared:

Beginning inventory at retail sales price . . . . .		XXXX
Add: Purchases at original sales price . . . . .	XXXX	
Net additional markups (additional markups less markup cancellations) . . . . .	XXX	XXX
Goods available for sale . . . . .		XXXX
Deduct: Sales at retail sales prices . . . . .	XXX	
Net markdowns (markdowns less markdown cancellations) plus any employees' discounts, in- ventory shortages, losses, etc. . . . .	XXX	XXX
Ending inventory at retail sales price . . . . .		XXXX

The ending inventory at retail as thus calculated is multiplied by the percentage representing the relationship of cost to retail in arriving at the ending inventory at cost.

In obtaining the cost percentage, the cost of goods available for sale is normally related to the original sales price plus the net markups, without taking into account the net markdowns. Calculation of ending inventory by the retail inventory method in this manner is illustrated below:

	AT RETAIL	AT COST
Beginning inventory . . . . .	\$ 14,000	\$ 8,600
Add: Purchases . . . . .	110,000	69,000
Freight in . . . . .		3,100
Net markups:		
Additional markups . . . . .	\$13,000	
Less: Markup cancellations . . . . .	2,500	10,500
Goods available for sale . . . . .	\$134,500	\$80,700
Deduct: Sales at retail . . . . .	\$108,000	
Net markdowns:		
Markdowns . . . . .	\$4,800	
Less: Markdown cancellations . . . . .	800	4,000
Ending inventory at retail sales price . . . . .	\$ 22,500	
Ending inventory at estimated cost:		
\$22,500 × 60% (percentage of cost to sales price before markdowns, \$80,700 ÷ \$134,500) . . . . .		\$13,500

Failure to consider markdowns in calculating the cost percentage results in a lower cost percentage and consequently gives a more conservative inventory figure than would otherwise be obtained. Markdowns may represent changes in price for special sales or clearance purposes, or they may arise from market fluctuations and a decline in the replacement cost of goods. In either case failure to consider markdowns in calculating the cost percentage is justified. This is illustrated in the two examples that follow:

*Example 1 — Markdowns for Special Sales Purposes:* Assume that merchandise which cost \$50,000 is marked to sell for \$100,000. To dispose of part of the goods immediately, one fourth of the stock is marked down \$5,000 and is sold. Calculation of the inventory follows:

	At RETAIL	At COST
Purchases	\$100,000	\$50,000
Deduct: Sales	\$20,000	
Markdowns	5,000	25,000
Ending inventory at retail sales price	\$ 75,000	
Ending inventory at estimated cost:		
\$75,000 $\times$ 50% (percentage of cost to sales price before markdowns, \$50,000 $\div$ \$100,000)		\$37,500
		<u>          </u>

If cost, \$50,000, had been related to sales price after markdowns, \$95,000, a cost percentage of 52.6 per cent would have been obtained, and the ending inventory, which is three fourths of the merchandise originally acquired, would have been reported at 52.6 per cent of \$75,000, or \$39,450. The ending inventory would thus be overstated and cost of goods sold understated. A markdown relating to goods no longer on hand would have been recognized in the development of a cost percentage to be applied to the ending inventory. Reductions in the goods available at sales price resulting from shortages, damaged goods, departmental transfers, or employees' discounts should likewise be disregarded in calculating the cost percentage.

*Example 2 — Markdowns as a Result of Market Declines:* Assume that merchandise which cost \$50,000 is marked to sell for \$100,000. With a drop in replacement cost of the goods to \$40,000, sales prices are marked down to \$80,000. One half of the merchandise is sold. Calculation of the ending inventory follows:

	AT RETAIL	AT COST
Purchases . . . . .	\$100,000	\$50,000
Deduct: Sales . . . . .	\$40,000	<u>          </u>
Markdowns . . . . .	20,000 60,000	<u>          </u>
Ending inventory at retail sales price . . . . .	\$ 40,000	
Ending inventory at estimated cost:		
\$40,000 × 50% (percentage of cost to sales price		
before markdowns, \$50,000 ÷ \$100,000) . . . . .		\$20,000
		<u>          </u>

Here, if cost, \$50,000, had been related to sales price after markdowns, \$80,000, a cost percentage of 62.5 per cent would have been obtained and the ending inventory would have been reported at 62.5 per cent of \$40,000, or \$25,000. While this procedure reduces the inventory to a cost basis, ignoring markdowns results in a cost percentage that reduces the inventory to a basis of cost or market, whichever is lower. Thus, the use of 50 per cent in the example reduces the inventory to \$20,000, or to a lower of cost or market basis in view of the company's policy of selling merchandise at a 50 per cent gross profit.

The advantages relating to the retail inventory method have already been described. It should be suggested, however, that this method is not entirely satisfactory unless the original rate of markons within an organization is fairly uniform, or unless high- and low-margin items sell in the same proportion. Where different percentage markups are applied, difficulties may be overcome by maintaining separate records and computing separate cost percentages for the different classes of merchandise sold.

### INVENTORY VALUATION IN A MANUFACTURING CONCERN

When a manufacturing organization does not maintain a cost accounting system and accurate costs of various commodities in process and in a finished state are not available, it becomes necessary to estimate the costs of these inventories at the end of the fiscal period. The illustrations that follow assume the manufacture of a single product. If more than one product is manufactured, the procedures to be followed are similar, although estimates would be involved to an even greater degree.

Costs of manufacturing are summarized in materials, labor, and other manufacturing expense accounts. These costs must be allocated to the goods that remain uncompleted at the end of the period and to goods that were completed and placed in stock during the period. After a cost is assigned to goods completed during the period, it is

necessary to allocate this cost to finished goods that remain on hand at the end of the period and to goods that were sold during the period.

In the manufacture of certain commodities, the raw materials required in their production must be added at various stages during the course of processing. In the manufacture of other commodities, all of the required raw materials are put in at the very beginning of the production process. In allocating manufacturing costs between goods remaining in process at the end of the period and goods completed during the period, information or estimates concerning two factors, then, must be available:

- (1) The degree to which total *material* requirements are met in the goods in process on hand, and
- (2) The degree to which total *processing costs*, consisting of labor and overhead, are met in these goods.

The accounting problems that arise in the allocation of costs will be illustrated by means of two examples: the first assumes that materials are added throughout the period of production; the second assumes that all of the required materials are put into process at the beginning of production.

*Example 1: Materials are added during period of production.*

Assume the following inventories on December 31:

Finished Goods — 1,000 units, cost \$2.50 per unit, or \$2,500.

Goods in Process — 800 units, estimated one fourth completed, cost \$500.

During January, 2,000 units were completed in the factory and placed in finished stock. On January 31 there are 900 units in process that are estimated to be two thirds completed. Fourteen hundred units were shipped to customers, 1,600 remaining in stock at the end of the period. Manufacturing costs were \$5,400, distributed as follows: materials, \$600; direct labor, \$3,500; and other manufacturing expenses, \$1,300.

The estimates of the degree of completion of goods in process in beginning and ending inventories express the estimated quantity of all of the elements of manufacturing cost—raw materials and processing costs—required in the final product.

It is first necessary to calculate the equivalent number of whole units of work performed in the factory during the month. This may be done as follows:

Number of units completed in January .....	2,000
Deduct equivalent whole units in process on January 1, 800 units estimated $\frac{1}{4}$ completed, or .....	200
	<hr/> 1,800
Add equivalent whole units in process on January 31, 900 units estimated $\frac{2}{3}$ completed, or .....	600
	<hr/> 2,400
Equivalent whole units of work performed in January .....	<hr/> <hr/> 2,400

Equivalent units performed for the month may be calculated in an alternate manner as follows:

Equivalent whole units of work done on units in process on January 1, 800 units, $\frac{1}{4}$ completed .....	600
Units started and completed during January, 2,000 units transferred out less 800 units above .....	1,200
Equivalent whole units of work done on units in process on January 31, 900 units, $\frac{2}{3}$ completed .....	600
	<hr/> 2,400
Equivalent whole units of work performed in January .....	<hr/> <hr/> 2,400

Manufacturing cost in January, \$5,400, divided by the number of units of work performed, 2,400, gives \$2.25, the cost for each unit of work performed. Using the first-in, first-out method, costs of goods completed, goods in process inventory, goods sold, and finished goods inventory may be calculated as follows:

#### COST OF GOODS COMPLETED AND TRANSFERRED FROM FACTORY TO STOCK:

2,000 units	800	<div> <div>1</div> <div>4</div> <div>3</div> <div>1</div> </div>	completed in December, cost.....	\$ 500
			completed in January, cost = $\$2.25 \times 600$	
			equivalent units ( $800 \times \frac{1}{4}$ ).....	1,350
	Total cost of first 800 units completed			
	(\$2.3125 per unit) .....			\$1,850
1,200 started and completed in January, cost \$2.25 per unit.			2,700	
Total				<u>\$4,550</u>

#### COST OF GOODS IN PROCESS INVENTORY:

900 units, $\frac{2}{3}$ completed in January, cost $\$2.25 \times 600$ equivalent units ( $900 \times \frac{2}{3}$ ) .....	<hr/> <hr/> \$1,350
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#### COST OF GOODS SOLD:

1,400 units	1,000 units on hand, December 31, cost \$2.50 per unit .....	\$2,500
	400 completed in January, cost \$2.3125 per unit .....	925
Total		<hr/> <hr/> \$3,425

**COST OF FINISHED GOODS INVENTORY:**

	400 completed in January, cost \$2.3125 per unit.....	\$ 925
1,600 units	1,200 completed in January, cost \$2.25 per unit.....	2,700
	<b>Total</b>	<b>\$3,625</b>

Assume that, in adjusting and closing the accounts at the end of the period, the cost of goods manufactured is summarized in a manufacturing account and cost of goods sold in the profit and loss account. The inventory, manufacturing, and profit and loss accounts will appear as follows after the goods in process and finished goods inventories as estimated above are recorded:

**GOODS IN PROCESS**

Dec. 31 Bal., 800 units, $\frac{1}{4}$ completed	500	Jan. 31 To Manufacturing	500
Jan. 31 Bal., 900 units, $\frac{3}{4}$ completed	1,350		

**FINISHED GOODS**

Dec. 31 Bal., 1,000 units	2,500	Jan. 31 To Profit and Loss	2,500
Jan. 31 Bal., 1,600 units	3,625		

**MANUFACTURING**

Jan. 31 Beginning Goods in Process Inventory, 800 units, $\frac{1}{4}$ completed	500	Jan. 31 Ending Goods in Process Inventory, 900 units, $\frac{3}{4}$ completed	1,350
31 Raw Materials Used	600	31 Completed, 2,000 units to Profit and Loss	4,550
31 Direct Labor	3,500		
31 Other Manufacturing Expenses	1,300		
	<u>5,900</u>		<u>5,900</u>

**PROFIT AND LOSS**

Jan. 31 Beginning Finished Goods Inventory, 1,000 units	2,500	Jan. 31 Ending Finished Goods Inventory, 1,600 units	3,625
31 Finished Goods from Manufacturing, 2,000 units	4,550		

The balance in the profit and loss account at this point reflects the cost of goods sold, \$3,425. After remaining income and expense accounts are closed into the profit and loss account, the net profit or loss as summarized here is transferred to the appropriate proprietorship account.

As suggested in Chapter 4, the manufacturing concern may close its accounts by summarizing manufacturing costs in the goods in proc-

ess account, transferring the cost of goods completed from goods in process to finished goods, and then transferring the cost of goods sold from finished goods to a separate cost of goods sold account. If this procedure is followed, goods in process, finished goods, and cost of goods sold accounts would appear as follows:

GOODS IN PROCESS			
Dec. 31	Bal., 800 units, $\frac{1}{4}$ completed	500	
Jan. 31	Raw Materials Used	600	
	31 Direct Labor	3,500	
	31 Other Manufacturing Expenses	1,300	
Jan. 31	Cost of Goods Completed, 2,000 units		4,550

(Balance in the account at the end of the month, \$1,350, represents the cost of 900 units of goods in process inventory,  $\frac{3}{4}$  completed.)

FINISHED GOODS			
Dec. 31	Bal., 1,000 units	2,500	
Jan. 31	Cost of Goods Completed, 2,000 units, from Goods in Process	4,550	
Jan. 31	Cost of Goods Sold, 1,400 units		3,425

(Balance in the account at the end of the month, \$3,625, represents the cost of 1,600 units of finished goods inventory.)

COST OF GOODS SOLD			
Jan. 31	Cost of Goods Sold, 1,400 units	3,425	

(Balance in this account is to be transferred to the profit and loss account in summarizing operations for the period.)

*Example 2: Materials are put into process at the beginning of production.*

In the example to follow, material and processing costs must be calculated separately. It is also assumed that goods are transferred from one process to another; hence inventory valuations must be assigned to goods within each process at the end of the period.

Assume the following inventories on December 31:

Finished Goods, 1,000 units, cost \$25 per unit, or \$25,000.

Goods in Process — Process C, 400 units,  $\frac{3}{4}$  completed, cost, \$9,000.

The goods in process inventory is made up of the following costs:

Materials cost (goods from Process B) at \$15 per unit . . . . .	\$6,000
Processing cost in Process C, \$10 × 300 equivalent units (400 units in process, $\frac{3}{4}$ completed) . . . . .	3,000

<b>Total</b>	<b>\$9,000</b>
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During January, 3,000 units enter Process C from Process B at a finished cost in Process B of \$14 per unit. The labor and overhead costs charged to Process C are \$24,300. On January 31, 600 units remain on hand in Process C estimated to be  $\frac{1}{3}$  completed in this process. Remaining units, 2,800, have been completed and removed to stock. Shipments to customers for January are 2,500 units. Materials are put into process in the first phase of production. The estimates of degree of completion of goods in process thus express only the estimated quantity of processing costs required in the final product.

The equivalent whole units of work performed in Process C during January are calculated as follows:

Number of units completed in January . . . . .	2,800
Deduct number of equivalent whole units in process on December 31, 400 units estimated $\frac{1}{3}$ completed . . . . .	300
	<hr/> 2,500
Add equivalent whole units in process on January 31, 600 units estimated $\frac{1}{3}$ completed . . . . .	200
	<hr/> 2,700

Processing costs, \$24,300, divided by the unit performance for the month, 2,700, gives \$9, the cost per unit for work performed. Using the first-in, first-out method, costs for goods completed, goods in process inventory — Process C, goods sold, and finished goods inventory, are calculated as follows:

COST OF GOODS COMPLETED IN PROCESS C AND TRANSFERRED TO STOCK:

2,800 units	400 units in process Jan. 1	Material cost (cost from Process B in December), \$15 per unit . . . . .	\$ 6,000
		Processing cost: $\frac{3}{4}$ completed in December, cost: $\$10 \times 300$ equivalent units ( $400 \times \frac{3}{4}$ ) . . . . .	3,000
		$\frac{1}{4}$ completed in January, cost: $\$9 \times 100$ equivalent units ( $400 \times \frac{1}{4}$ ) . . . . .	900
		Total cost of first 400 units completed (\$24.75 per unit) . . . . .	\$ 9,900
2,400 units started and completed in January	2,400 units started and completed in January	Material cost (cost from Process B in January), \$14 per unit . . . . .	\$33,600
		Processing cost in January, \$9 per unit . . . . .	21,600
		Total cost of additional 2,400 units completed (\$23 per unit) . . . . .	55,200
		Total	<hr/> \$65,100

## COST OF GOODS IN PROCESS C INVENTORY:

600 units	Material cost (cost from Process B in January), \$14 per unit.....	\$ 8,400
	Processing $\frac{1}{3}$ completed in January, cost: $\$9 \times 200$ equivalent units ( $600 \times \frac{1}{3}$ ).....	1,800
	Total	<u>\$10,200</u>

## COST OF GOODS SOLD:

2,500 units	1,000 units on hand December 31, cost \$25 per unit.....	\$25,000
	400 units completed in January, cost \$24.75 per unit.	9,900
	1,100 units completed in January, cost \$23 per unit..	25,300
	Total	<u>\$60,200</u>

## COST OF FINISHED GOODS INVENTORY:

1,300 units completed in January, cost \$23 per unit.....	<u>\$29,900</u>
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The accounts in the ledger affected by the foregoing will appear as follows:

PROCESS B			
Dec. 31 Balance	xxx	Jan. 31 Completed, to Process C,	
Materials	xxx	3,000 units	42,000
Processing costs	xxx		

PROCESS C			
Dec. 31 Balance, 400 units	9,000	Jan. 31 Cost of goods completed,	
Jan. 31 Material cost (from Process B) 3,000 units	42,000	2,800 units	65,100
31 Processing costs	24,300		

(Balance in the account at the end of the month, \$10,200, represents the cost of 600 units of goods in Process C inventory,  $\frac{1}{3}$  completed.)

FINISHED GOODS			
Dec. 31 Balance, 1,000 units	25,000	Jan. 31 Cost of goods sold, 2,500 units	60,200
31 Cost of goods completed, 2,800 units from Process C	65,100		

(Balance in the account at the end of the month, \$29,900, represents the cost of 1,300 units of finished goods inventory.)

COST OF GOODS SOLD	
Jan. 31 Cost of goods sold, 2,500 units	60,200

(Balance in this account is to be transferred to the profit and loss account in summarizing operations for the period.)

**INVENTORIES ON THE  
BALANCE SHEET**

It is customary for business units to report trading as well as manufacturing inventories as current assets, even though it is recognized in some instances that it may take considerable time before such inventories are realized in the form of cash. Among the items that are generally reported separately under the inventories heading are *merchandise inventory* or *finished goods*, *goods in process*, *raw materials*, *goods and materials in transit*, *goods out on consignment*, and *goods in the hands of agents and salesmen*.

Purchase orders should not be treated as additions to inventories, nor should sales orders be treated as deductions so long as title to goods has not passed. When goods have been formally set aside and the recognition of title transfer is appropriate, purchases or sales entries are required with proper recognition of the effect of such transactions on the inventory position. Advance payment on a purchase commitment should not be included in inventories but should be reported separately as a special receivable balance until applied to the obligation resulting from the purchase.

A number of parenthetical remarks or footnotes may be required to afford full disclosure concerning the inventory valuation procedures employed by the company. The basis of valuation (cost, lower of cost or market, etc.), together with the method of arriving at cost (lifo, fifo, average, or other method), should be fully indicated. The reader of a statement may assume that the valuation procedures indicated have been consistently applied. If this is not the case, the change in the method of valuation of inventories in developing balance sheet and income statement data should be explained by means of a special note so that the effects of the change can be fully appreciated. Such a note should also report net income developed in accordance with practices of prior years so that the reader of the statement may make intelligent comparisons of current operating results with those of previous periods. If such data are to be made available, inventory valuations in terms of the old procedures as well as the new will be required in the year in which a change is adopted.

When the inventory costing method offers values that are materially less than current replacement costs, parenthetical disclosure of such current values should be provided on the balance sheet. The use of lifo and base stock methods, for example, may result in serious distortions of working capital measurements. Supplementary data concerning market must be provided if the reader of the statement is to be fully informed concerning financial position.

When an inventory is reduced to the lower of cost or market by means of a valuation allowance, such an allowance is properly reported as a subtraction from the inventory at cost. However, if earned surplus has been appropriated to preserve earnings within the business for possible future market decline in the inventory value, such an appropriation is reported as a part of the company's surplus. If the decline fails to materialize, the surplus appropriation is no longer required and is returned to earned surplus. If the decline does materialize, the inventory loss is reported on the income statement in the year in which it takes place and the surplus appropriation is still returned to earned surplus, where it will absorb the inventory loss that is ultimately carried to the latter account.

If significant inventory price declines take place between the balance sheet date and the date the statement is actually prepared, mention of such declines should be made by footnote. When relatively large orders for merchandise have been placed in a period of widely fluctuating prices but the title to such items has not yet passed, an explanation should be provided concerning such commitments. Information should also be provided concerning any contingent losses on such purchase commitments. Similar information may be appropriate with respect to sales commitments.

When inventories or sections of an inventory have been pledged as security on certain loan contracts, such pledges should be mentioned in the inventory section.

Inventory items, as these might appear on a balance sheet, are shown below:

Inventories (valuation on the basis of cost or market, whichever is lower, cost being obtained by the first-in, first-out method):		
Finished goods:		
On hand (goods of \$100,000 have been pledged as security on loan of \$75,000 from First State Bank).	\$300,000	
On consignment .....	15,000	\$315,000
Finished parts .....		25,000
Goods in process .....		300,000
Raw materials:		
On hand .....	\$210,000	
In transit from suppliers .....	30,000	240,000
Factory supplies .....		12,000
Total inventories .....		\$892,000

## QUESTIONS

1. Give certain instances in which estimates of inventory costs are necessary or appropriate and state what procedure would be followed in developing satisfactory estimates of such costs.
2. Distinguish between: (a) gross profit as a percentage of cost and gross profit as a percentage of sales; (b) markup cancellation and markdown; (c) the gross profits method of calculating estimated inventory cost and the retail inventory method of calculating estimated inventory cost.
3. What is your understanding of the meaning of the "gross profits test"?
4. Define (a) initial markup, (b) additional markup, (c) markup cancellation, (d) markdown, (e) markdown cancellation, and (f) maintained markup.
5. What are the advantages of the retail inventory method?
6. (a) Does the retail inventory method eliminate the need for physical inventory procedures? (b) What procedure would you recommend when a physical inventory at retail offers an inventory balance that differs from inventory records maintained at retail?
7. At what point should the cost percentage be calculated in the retail inventory method in order to find the most conservative new inventory figure? Why?
8. A merchant taking inventory by the retail method maintains no separate record of markup cancellations and markdown cancellations. Instead he includes the former in markdowns and the latter in markups, as "these represent price decreases and increases respectively." How will this procedure affect his inventory at (a) retail? (b) cost?
9. (a) What is meant by the term "equivalent units"? (b) Does this term apply only to processing costs or is it applicable to raw material costs as well?
10. How would you recommend that the following items be reported on the balance sheet:
  - (a) Unsold goods in the hands of consignees.
  - (b) Purchase orders outstanding.
  - (c) Advance payments on purchase commitments.
  - (d) Raw materials pledged by means of warehouse receipts on notes payable to bank.
  - (e) Raw materials in transit from suppliers.
  - (f) An allowance to reduce the inventory cost to a lower market.
  - (g) A reserve for possible future inventory declines.
  - (h) Materials received from a customer for processing.
  - (i) Merchandise produced by special order and set aside to be picked up by customer.
  - (j) Raw materials set aside and to be used in connection with plant rehabilitation activities.
  - (k) Finished parts to be used in the assembly of final products.
11. The McArthur Co. changes from fifo to lifo for inventory valuation in 1953. How should this change be accomplished on the statements prepared at the end of 1953?

## EXERCISES

1. (a) What is the percentage of profit on the basis of cost price when the gross profit margin is 25% of selling price? 50% of selling price? 60% of selling price?

(b) What is the percentage of profit on the basis of sales price when the gross profit percentage is 25% of cost?  $33\frac{1}{3}\%$  of cost? 50% of cost? 100% of cost?

2. (a) What percentage markon on cost is required to produce a 20% gross profit on sales? a 25% gross profit on sales? a 40% gross profit on sales?

(b) What is the gross profit on sales if goods are marked up 20% above cost? 50% above cost? 60% above cost?

3. Assume sales for a period of \$100,000. What is the cost of goods sold under each assumption below:

- (a) Gross profit on sales is 25%.
- (b) Gross profit on cost of sales is 60%.
- (c) Goods are marked up  $\frac{1}{5}$  above cost.
- (d) Gross profit on cost of sales is 200%.
- (e) Goods are marked up 150% above cost.
- (f) Gross profit on sales is 18%.
- (g) Gross profit on cost is 18%.

4. R. I. Kelly requires an estimate of the cost of merchandise lost by fire on March 7. Merchandise inventory on January 1 was \$40,000. Purchases since January 1 were \$35,000; freight in, \$3,000; purchases returns and allowances, \$2,000. Sales are made at 25% above cost and totaled \$42,000 to March 7. (a) What was the cost of merchandise destroyed? (b) What would your answer be if sales are made at a gross profit of 25% of sales?

5. P. L. Warner takes an inventory at cost on January 15, 1954, which is \$18,000. His statements are based on the calendar year, so you find it necessary to establish an inventory figure as of January 1, 1954. You find that during the period January 2-15, sales were \$60,000; sales returns, \$1,500; goods purchased and placed in stock, \$54,000; goods removed from stock and returned to vendors, \$2,000; freight in, \$500. Calculate an inventory cost as of January 1 assuming that goods are marked to sell at 30% above cost.

6. The profit and loss data for the Ernst Co. follows:

	SALES	PURCHASES
January . . . . .	\$50,000	\$40,000
February . . . . .	60,000	40,000
March . . . . .	65,000	50,000

The merchandise inventory at cost on January 1 was \$20,000. Goods are sold at a gross profit of 20% on sales. Compute the monthly inventory balances for interim statement purposes.

7. The income statement for P. A. Brock for the year ended December 31, 1953, shows the following:

Sales.....		\$100,000	
Cost of goods sold:			
Beginning inventory.....	\$16,000		
Purchases .....	80,000		
		<hr/>	
		\$96,000	
Less: Ending inventory.....		33,500	62,500
Gross profit.....			\$37,500

Quarterly sales and purchases during 1953 were as follows:

	SALES	PURCHASES		SALES	PURCHASES
1st quarter..	\$15,000	\$10,000	3rd quarter..	\$30,000	\$35,000
2nd quarter.	20,000	20,000	4th quarter..	35,000	15,000

Assuming that the rate of gross profit was constant during the year and operating expenses were 40% of gross profit, develop:

- Quarterly summaries of operating data.
- Merchandise turnover rate for the year using beginning and ending inventory balances.
- Merchandise turnover rate for the year using quarterly inventory balances as developed in (a).

8. A merchandise inventory calculated by the retail inventory method is \$64,000. A physical count of the stock on hand shows merchandise at a retail value of \$58,000. (a) Suggest possible reasons for the discrepancy. (b) What accounting treatment would be called for in each instance?

9. Records for the Brooks Dept. Store disclose the following data:

	AT COST	AT RETAIL
Merchandise Inventory, Jan. 1.....	\$ 40,000	\$ 60,000
Purchases, Jan. 1-Dec. 31 .....	160,000	
Sales, Jan. 1-Dec. 31 .....		205,000
Sales Returns, Jan. 1-Dec. 31 .....		5,000

Inventory taken on Dec. 31 shows merchandise on hand valued at retail at \$120,000. From the foregoing information calculate the estimated cost of the ending inventory.

10. From the records kept by the Lovett Department Store, the following information is available for the month of January:

	AT COST	AT SELLING PRICE		AT COST	AT SELLING PRICE
Inventory, January 1...	\$ 8,400	\$12,000	Markup can-		
Purchases....	48,810	80,000	cellations....		\$ 800
Freight in....	2,000		Markdowns....		6,600
Additional			Markdown can-		
markups. .		4,300	cellations....		200
			Sales .....		72,600

(1) Calculate the inventory on January 31 at (a) the sales price and (b) a conservative cost figure.

(2) Assuming that a physical count on January 31 shows inventory at retail of \$15,500, how would this be explained and what effect does this have on the calculation of the ending inventory?

11. The Standard Manufacturing Company had 300 units,  $\frac{1}{3}$  finished, on hand on January 1; during the month 3,000 units were finished; on January 31 there were 400 units,  $\frac{3}{4}$  finished, on hand. How much work, expressed in equivalent whole units, was performed during the month of January?

12. On September 1 the Moore Manufacturers had 800 units,  $\frac{1}{4}$  finished, in Process No. 2; during September, 2,000 units entered into Process No. 2 from Process No. 1; on September 30 there were 900 units,  $\frac{2}{3}$  finished, in Process No. 2. (a) How many equivalent whole units of work were performed in Process No. 2 during September? (b) How many units were completed and transferred out of Process No. 2 during the month of September?

13. The Paul Manufacturing Co. produces a single product. During December materials of \$18,000 were requisitioned for use in the factory. Other manufacturing costs in December were: labor, \$30,000; overhead \$12,000. During December 12,000 units were completed and transferred to finished stock. On December 1 there were 6,000 units in process in the factory, estimated  $\frac{1}{3}$  completed, estimated cost, \$7,200. On December 31 there were 8,000 units in process, estimated  $\frac{2}{3}$  completed. Degree of completion indicates the estimated portion of the total necessary cost to produce. What is the cost of goods completed in December and the ending goods in process inventory? Assume that the first-in, first-out method is used in calculating inventory costs.

14. The Lloyd Co. produces Product X by a continuous processing procedure. On November 30 the Process C account shows the following information:

#### PROCESS C

Nov. 1 Bal., 8,000 lbs. (goods from Process B at 60¢; labor and overhead, processing $\frac{1}{2}$ completed, at 20¢)	6,400	Nov. 30 16,000 lbs. to Process D	
1-30 From Process B, 20,000 lbs. at 70¢	14,000	Nov. 30 Bal. (12,000 lbs., processing $\frac{1}{2}$ completed)	
Labor	12,000		
Overhead	6,000		

What is the cost of the 16,000 lbs. of mix leaving Process C in November and the cost of the 12,000 lbs. remaining in process on November 30? Assume that the first-in, first-out method is used in calculating the cost of the inventory.

## PROBLEMS

~~10-1~~ All of the merchandise of the Terminal Market is destroyed by fire on March 15, 1953. Sales and merchandise data for the year to date of fire were as follows:

Sales.....	\$65,000
Sales returns.....	2,000
Merchandise inventory, January 1.....	21,500
Freight in.....	800
Purchases.....	50,000
Purchases returns.....	1,800

*Instructions:* (1) Prepare a schedule to show the estimated fire loss, assuming that merchandise is sold at 40% above cost.

(2) Prepare a schedule to show the estimated fire loss, assuming that merchandise is sold at a gross profit that is 40% of sales price.

~~10-2~~ The Woodbury Men's Store takes a physical inventory on March 31, 1953, and summarizes operations for the first quarter as follows:

## WOODBURY MEN'S STORE

## INCOME STATEMENT

FOR THREE MONTHS ENDED MARCH 31, 1953

Sales.....		\$198,000
Cost of goods sold:		
Inventory, January 1.....	\$ 64,000	
Purchases.....	208,000	
	\$272,000	
Inventory, March 31.....	113,600	158,400
		<hr/>
Gross profit.....		\$ 39,600
Expenses.....		13,600
		<hr/>
		\$ 26,000
Less: Income taxes (30%).....		7,800
		<hr/>
Net profit for quarter.....		\$ 18,200
		<hr/> <hr/>

In analyzing sales, purchases, and expenses, the following monthly totals are found:

	Sales	Purchases	Expenses
January.....	\$ 50,000	\$ 75,000	\$ 3,120
February.....	76,000	64,000	5,380
March.....	72,000	69,000	5,100
	<hr/>	<hr/>	<hr/>
	\$198,000	\$208,000	\$13,600
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

*Instructions:* Prepare a comparative income statement showing operating detail for each of the three months. In computing the monthly inventories, assume that the gross profit margin remained constant throughout the three-month period.

**10-3.** Quarterly purchases and sales for the Whitney Corporation for 1953 are listed below. The corporation began 1953 with a merchandise inventory of \$31,515. Goods have been sold at a uniform markup of 66  $\frac{2}{3}$ %.

	Purchases	Sales
January 1 — March 31	\$36,300	\$43,150
April 1 — June 30	27,900	51,620
July 1 — September 30	43,815	66,550
October 1 — December 31	27,000	72,275

*Instructions:* (1) Calculate the inventory for the end of each quarter.

(2) Calculate the merchandise turnover rate for the year based upon quarterly data.

**10-4.** The records of Jolson's Store shows the following data for the month of April:

Sales	\$168,000	Purchases (at sales price)	\$ 70,000
Additional markups	13,500	Markup cancellations	3,500
Markdowns	28,000	Beginning inventory (at cost price)	115,000
Markdown cancellations	2,000	Beginning inventory (at sales price)	170,000
Freight in on purchases	2,000		
Purchases (at cost price)	40,000		

*Instructions:* (1) Calculate the inventory at retail price.

(2) Calculate the inventory at a conservative cost price using the retail inventory method.

**10-5.** The following information is found in the records of Department No. 17 of the Crafts Store at the end of January: sales, \$33,000; beginning inventory, at cost, \$28,400; beginning inventory, at selling price, \$44,000; purchases, at cost, \$9,200; purchases, at selling price, \$15,000; freight in, \$440; purchases returns, at selling price, \$800; purchases returns, at cost price, \$520; additional markups, \$2,500; markup cancellations, \$500; markdowns, \$3,700; markdown cancellations, \$1,160; employee discounts, \$195; estimated loss from spoilage, breakage, etc., at retail, \$465.

*Instructions:* (1) Calculate the inventory at sales price.

(2) Calculate the inventory at a conservative cost price using the retail inventory method.

**10-6.** The Balfour Corporation engages in the production of a standard type of electric motor. Manufacturing costs for the month of November were \$61,600. At the beginning of the month, company inventories were as follows:

Motors in production, estimated 80% completed	2,000 units, \$24,000
Motors on hand, 100% completed	1,200 units, \$18,000

During the month 5,000 completed units left the factory and were put into stock. At the end of the month, inventories were as follows:

Motors in production, estimated 40% completed, 1,500 units  
 Motors on hand, 100% completed 1,400 units

*Instructions:* Assuming valuation on the basis of first-in, first-out, calculate: (1) the cost of the ending work in process and finished goods inventories and (2) the cost of goods sold.

**10-7.** On May 1 the finished goods inventory account on the books of Watson Manufacturing Company has a balance of \$9,000 and the goods in process inventory account has a balance of \$16,500. There were 300 units of finished product on hand and 825 units in process, averaging  $\frac{2}{3}$  completed. During May the total materials cost used in production was \$10,560; labor was \$9,350; other manufacturing expenses were \$7,150. During May 1,210 units were completed and placed in stock, and on May 31 there were 880 units  $\frac{1}{4}$  completed in the factory. On May 31 there were 500 finished units in stock after shipments to customers. The degree of completion of goods in process indicates the estimated portion of the total necessary cost to produce. The first-in, first-out method is used in calculating cost.

*Instructions:* Prepare summaries to show:

- (1) Equivalent number of whole units of work performed.
- (2) Cost of goods completed and transferred to finished stock.
- (3) Cost of goods in process inventory.
- (4) Cost of finished goods inventory.
- (5) Cost of goods sold.

**10-8.** Franklin Metals, Inc. produces a single product. On December 1, 1953, inventories of the company were:

Raw Materials . . . . .	\$12,500
Goods in Process (1,000 units, approximately 50% completed) . . .	21,250
Finished Goods (300 units) . . . . .	12,600

During December materials of \$14,000 were purchased and materials of \$16,830 were requisitioned for use in the factory. Costs during December were: labor, \$25,780; other manufacturing costs, \$12,000. During the month of December, 1,200 units were placed in finished stock and 1,150 units were sold at \$56 per unit. At the end of the month, 1,900 units were in process, approximately 30% completed. Selling, general, and administrative expenses for the month were \$9,200. Degree of completion indicates the estimated portion of the total necessary cost to produce. The first-in, first-out method is used in calculating cost.

*Instructions:* Prepare an income statement, accompanied by a cost of goods manufactured schedule, and summaries in support of inventory values used.

**10-9.** A goods in process account on the books of Matson Manufacturers appears as indicated below. Materials are received from Process A and the degree of completion refers only to processing costs as applied to such materials.

Process B	
May 1, Inventory, 1,600 units, $\frac{1}{4}$ completed	8,800
1-31, 4,000 units from Process A. . . . .	20,000
Processing costs.	32,200

May 1-31, 3,800 units to Finished Goods	
31, Inventory, 1,800 units, $\frac{2}{3}$ completed	

*Instructions:* (1) Calculate the number of equivalent whole units of work performed in Process B.

(2) Determine the total costs and the costs per unit for goods completed and for goods in process. The first-in, first-out method is used in calculating costs.

**10-10.** The Evanson Corporation has three processes in its factory. The following charges appear in the Process #2 account for the month of October:

Process #2	
Oct. 1, Inventory, 500 units, 40% completed. .	5,400
1-31, 6,250 units from Process #1. . . . .	65,000
Labor. . . . .	9,500
Other factory expenses.	5,500

In October, 6,000 units were completed and transferred to Process #3. The units remaining in process on October 31 are 60% completed. The degree of completion refers to processing costs only.

*Instructions:* (1) Calculate the number of equivalent whole units of work done in Process #2.

(2) Calculate the total costs and the costs per unit for goods transferred to Process #3 and for goods remaining in Process #2. The first-in, first-out method is used in calculating costs.

**10-11.** The operations of a department of a retail store that uses the retail method of inventory determination are given in the figures presented below:

Opening inventory—cost. . . . .	\$14,250
Opening inventory—sales price. . . . .	19,105
Purchases—cost. . . . .	33,771
Purchases—sales price. . . . .	46,312
Purchase allowance. . . . .	1,093
Freight in. . . . .	845
Departmental transfers (debit)—cost.	100

Departmental transfers (debit)—sales price.....	\$ 140
Additional markups.....	1,207
Markup cancellations.....	274
Inventory shortage—sales price.....	704
Sales (including sales of \$4,460 of items that were marked down from \$5,920).....	37,246

*Instructions:* Set up a computation showing the ending inventory at sales price and at cost as determined by the retail method. (A.I.A. adapted)

**10-12.** On July 1, 1953, the merchandise inventory of the glove department of a department store aggregated \$90,600 at retail and \$54,360 at cost. During the following six months, the purchases and the sales were as follows:

	PURCHASES			
	COST	RETAIL PRICE	ORIGINAL MARKUP	NET SALES
July.....	\$ 24,300	\$ 40,200	\$ 15,900	\$ 24,900
August.....	31,500	55,800	24,300	30,500
September.....	43,000	75,900	32,900	38,200
October.....	35,200	60,000	24,800	55,300
November.....	17,300	30,300	13,000	58,700
December.....	9,500	15,700	6,200	60,900
	\$160,800	\$277,900	\$117,100	\$268,500

During these six months the following reductions were made in the retail prices:

(a) To facilitate disposal of overstock.....	\$ 4,000
(b) In connection with odd lots.....	2,500
(c) To meet competitive prices.....	3,000
(d) Miscellaneous.....	2,000
	\$11,500

In addition to the above markdowns, the selling price of certain merchandise was reduced in connection with a special store-wide sale held annually in October of each year. For the duration of the sale, the selling price of a lot of merchandise consisting of 300 dozen pairs of a nationally advertised brand of gloves was reduced from \$5 per pair to \$4.25 per pair. At the conclusion of the special sales period it was found that 26 dozen pair remained unsold and the selling price thereof was restored to \$5 per pair.

During the season the selling price of a special lot of imported gloves that proved to be unusually popular was increased from the original selling price of \$6 per pair to \$7.50 per pair. This additional markup applied to 500 dozen pairs of gloves. Later in this season the additional markup of \$1.50 was canceled on 75 dozen pairs of gloves of a certain color that

were not moving as fast as the remainder of the line and the price was reduced to the original price of \$6 per pair.

A physical inventory taken at the close of business December 31, 1953, aggregated \$94,500 at retail. The physical inventory at retail was found to be unusually close to the book inventory and did not show the normal expected shrinkage. Investigation revealed that a lot of 50 dozen pairs of gloves received in the last few days of the year had not been included in the purchases recorded in the stock record because the invoice had not been received until after the close of the year. This lot of 50 dozen pairs of gloves was purchased at a cost of \$3.75 per pair and was marked to sell at \$6 per pair. Some of the gloves included in this lot had been sold before the close of the year and were not included in the inventory.

*Instructions:* From the above information compute the following by use of the retail inventory method, carrying percentages to two decimal places.

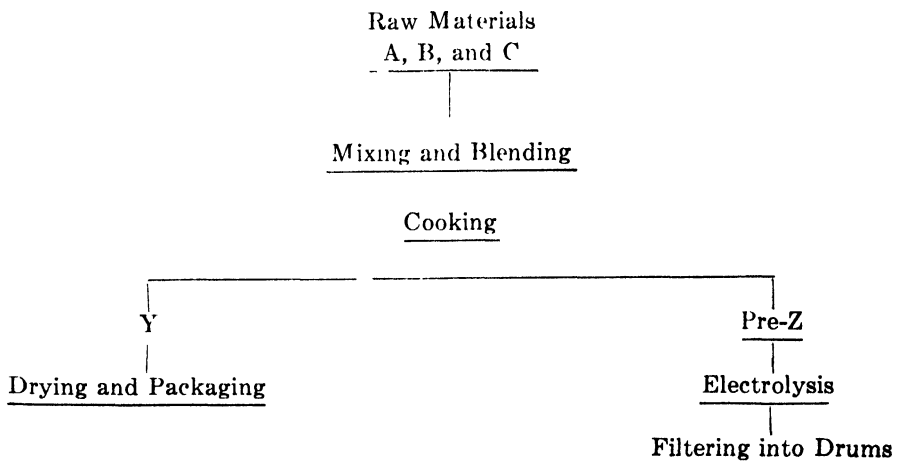
- (1) The amount of the stock shortage at retail.
- (2) The value at which the closing inventory of the glove department should be carried on the balance sheet.
- (3) The cost of sales for the six months ended December 31, 1953. (A.I.A. adapted)

**10-13.** The Berney Chemical Co. has perfected a process for producing from the three raw materials, A, B and C, two chemical compounds, Y and Z.

The raw materials are required in the following proportions by weight:

A	3 parts
B	5 parts
C	2 parts
	10 parts

The following diagram illustrates the manufacturing process:



One hundred thousand (100,000) pounds of raw material will be processed. The unit costs of the three raw materials are as follows:

A.....	\$ 2.00 per pound
B.....	\$50.00 per ton
C..... (8 lbs. per gallon).....	\$ 4.00 per gallon

Other costs of production are estimated to be:

Mixing, blending and cooking .....	\$16,090
Additional costs applicable to Y:	
Drying and packaging .....	4,660
Additional costs applicable to Z:	
Electrolysis and filtering to drums .....	6,920

The cooking process reduces the weight of the combined raw materials by 40%.

Out of 100,000 pounds of original raw materials, 20,000 pounds of pre-Z are obtained. Of the pre-Z electrolyzed, 25% becomes a non-marketable precipitate; the remainder, a liquid, is filtered into 50-gallon drums without further attention.

The cost of drums, which are returnable and for which customers are to be charged specifically, is not to be included in either the cost or the price of Z.

Each product is to be sold on the basis of a list price, less 35% and 10%. Of the net selling price of each product, 25% is to be allowed for selling, administrative, and general expenses (including provision for income tax) and 20% for net profit after provision for all costs and expenses.

The company has never marketed either of the products, but has demonstrated the existence of markets for both if they can be manufactured to sell at suitable prices. Its experience in producing both these and other chemicals leads it to believe that the above estimates of cost relative to the processing of 100,000 pounds of the three raw materials combined are reliable as a basis for setting a price for each of the products to be manufactured therefrom.

Note: One gallon of Z weighs 7.5 pounds and one gallon of Raw Material C weighs 8 pounds.

*Instructions:* From the information above, prepare the following statements, supported by whatever explanatory schedules you consider necessary. (Except for unit costs, carry computations to the nearest dollar only).

(1) Statement to show at what list price and at what net price per pound Y should be sold.

(2) Statement to show at what list price and at what net price per gallon Z should be sold.

(3) Condensed income statement to show, separately and combined, the results of operations in Y and Z, on the assumption that the entire quantity of each product manufactured will be sold at the respective prices indicated in the statements prepared in (1) and in (2) above, and that selling, administrative, and general expenses are to be included at the same estimate as is allowed in setting such prices. (A.I.A. adapted)

## *Current Liabilities*

### **NATURE OF LIABILITIES**

In an economic system based so largely on credit, one finds many examples of credit on the balance sheet. Most goods and services are purchased on account. Funds are borrowed from commercial banks for working capital purposes. Large sums needed to finance new buildings and machinery are provided by bond issues. During the lives of such obligations, interest accrues as an additional liability. Taxes accrued but not yet due appear as liabilities until paid. Employees working for the enterprise are creditors until paid.

Obligations of the business unit must be fully recognized and properly measured on the balance sheet if both the creditors' interest and the residual owners' interest in business assets are to be reported accurately. Appropriate distinction in liability presentation between current and noncurrent items is necessary if the company's working capital position is to be accurately defined.

Full recognition on the balance sheet of contingent claims, those liabilities that may materialize as a result of certain past acts or present conditions, is also essential. The materialization of contingent claims may result in a change in existing creditor and ownership equities. Furthermore, such materialization will normally call for current payment. Contingent claims, therefore, must be considered along with presently existing claims in arriving at judgments concerning a company's ability to meet debt requirements.

This chapter considers the problems relating to determination, measurement, and presentation of current and contingent liabilities. The problems relating to long-term obligations are considered in Chapter 19.

### **CURRENT LIABILITIES**

It was suggested in Chapter 1 that current liabilities are broadly defined to include (1) all claims arising from operations related to the operating cycle and payable within the course of such a cycle and (2) all other claims that are to be liquidated within a year. These current liabilities make a claim against resources classified as current. Current liabilities are subtracted from current assets in arriving at the company's working capital.

Items entering into the current liability grouping may be classed under the following headings: (1) notes and accounts currently payable, (2) current maturities of long-term obligations, (3) cash dividends payable, (4) accrued expenses, and (5) prepaid income items including customers' advances making claims upon current assets. These classes are described in the following paragraphs.

**NOTES AND  
ACCOUNTS CURRENTLY  
PAYABLE**

Both notes and accounts that are currently payable originate from a number of different transactions. Notes payable may be grouped as follows: notes issued to trade creditors for the purchase of goods and services; notes issued to banks for loans; notes issued to officers, stockholders, and employees for advances; and notes issued to others, including notes issued for the purchase of equipment, etc. Current accounts payable may consist of a wide variety of items, such as: amounts owed trade creditors for the purchase of goods and services; amounts owed for the purchase of property items and securities; bank overdrafts; credit balances in customers' accounts; customers' refundable deposits; advances from officers, stockholders, and employees; and guaranteed dividends on stock of affiliated companies.

In the presentation of current payables for statement purposes, it is normally desirable to classify notes and accounts in terms of the special origins of these items. Such a presentation affords information concerning the sources of business indebtedness as well as the extent to which the business has relied upon such sources in financing its activities.

In arriving at the total amount owed trade creditors, particular attention must be given to the purchase of goods and services at the end of the period. Both the goods and the services acquired, as well as the accompanying obligations, must be reflected on the statements even though invoices evidencing the charges are not received until the following period.

Individual notes and accounts are frequently secured by the pledge of certain assets. Assets pledged may consist of marketable securities, notes receivable, accounts receivable, inventories, or plant and equipment items. The pledge of an asset limits the use or the disposition of the asset or its proceeds until the related obligation is liquidated. In the event of bankruptcy, the cash that is realized on an asset that has been pledged must first be applied to the satisfaction of the related debt. An obligation is *partly secured* or *fully secured* depending upon whether the value of the pledge is less than the amount of the claim or whether such value is equal to or in excess of the claim. It has already

been suggested that reference is made to a lien on an asset by parenthetical remark in the asset section. It is also desirable to provide in connection with the liability item a parenthetical note or footnote that identifies the asset pledged and indicates its present market value. Those using the balance sheet are thus informed concerning obligations that make special claims on specific property items.

**CURRENT MATURITIES  
OF LONG-TERM  
OBLIGATIONS**

Bonds, mortgage notes, and other long-term indebtedness are reported as current liabilities if they mature within twelve months following the date of the balance sheet. When only a part of a long-term obligation is payable currently, as in the case of bonds that are payable in a series of annual installments, the maturing portion of the debt is reported as current, the balance as noncurrent. But, if the maturing obligation is payable out of a sinking fund or if it is to be retired from the proceeds of new bonds or mortgages, it will not call for the use of current funds and hence should continue to be listed as noncurrent with appropriate reference to the plan for its liquidation.

**DIVIDENDS PAYABLE**

A cash dividend that is declared by appropriate action of the board of directors is recorded by a charge to Earned Surplus and a credit to Cash Dividends Payable. The latter balance is reported as a current liability. The declaration of a dividend payable in the form of additional shares of stock is recorded by a debit to Earned Surplus and a credit to Stock Dividends Payable. The latter balance does not appear in the liabilities section of the balance sheet; instead it is reported in the capital section, since it represents a transfer not yet completed from Earned Surplus to Capital Stock.

A company with cumulative preferred stock outstanding may have sufficient surplus for the legal declaration of a dividend but may fail to declare a dividend in order to retain working capital for other purposes. A liability is not recognized here, for dividends do not accrue as does interest; nevertheless the amount of cumulative dividends unpaid should be reported on the balance sheet. This amount may be shown parenthetically in the capital section following a description of the stock or it may be reported by a footnote. Readers of the statement are entitled to full information regarding any cumulative dividends in arrears.

**ACCRUED EXPENSES**

A subsection under current liabilities may be devoted to those expenses that have accrued as of the balance sheet date. An examination of the expense accounts

as well as of the obligations that are interest-bearing is required in determining the accrued expenses. Some of the most common accrued items include those for sales taxes; payroll taxes, including federal old-age benefits tax, employees' federal income tax withholdings, and federal and state unemployment insurance taxes; salaries, wages, and bonuses; real estate taxes; license fees; and interest. The problems involved in the measurement of several of these items require special consideration.

### SALES TAXES PAYABLE

With the passage of sales tax laws by states and municipalities, certain new duties are required of business. Laws generally provide that the business unit must act as an agent for the governmental authority in the collection of sales taxes. Provision must be made in the accounting records for determining the liability of the business to the government for amounts collected.

*Sales Tax Collections Included in Sales Balance.* The sales taxes payable are generally a stated percentage of sales. When the sales tax collections as well as sales are recorded in total in the sales account, it becomes necessary to divide this amount into its component parts, Sales and Sales Taxes Payable. For example, if the sales tax is 3% of net sales, then the amount recorded in the sales account is sales + .03 of sales, or 1.03 times the sales total. The amount of sales is obtained by dividing the sales account balance by 1.03, and 3% of the sales amount as thus derived is the tax liability. To illustrate, assume that the sales account balance is \$100,000, which includes sales taxes of 3%. Sales, then, are  $\$100,000 \div 1.03$ , or \$97,087.38. Three per cent of this amount, or \$2,912.62, is the sales tax liability. Entries for the period would appear as follows:

Cash (or Accounts Receivable).....	100,000.00	
Sales.....		100,000.00
To record the sales for the period including sales taxes.		
Sales.....	2,912.62	
Sales Taxes Payable.....		2,912.62
To record the sales tax liability for the period.		

*Sales Tax Collections Recorded Separately.* Frequently the actual sales total and the sales tax collections are recorded separately at the time of sale. The sales taxes payable account then accumulates the sales tax liability. If sales tax collections are not exactly equal to the sales tax liability for the period as computed under the law, the sales taxes payable account will require adjustment to bring it to the balance

due. In making this adjustment a gain or a loss on sales tax collections is recognized, and this balance is ultimately closed into the profit and loss account. To illustrate, assume that actual sales of a retail store for a month were \$25,000, of which \$15,000 were credit sales and \$10,000 were cash sales; sales taxes of \$451 were charged on credit sales and sales taxes of \$271 were collected on cash sales. The law provides that the sales tax liability shall be 3% of retail sales. Entries for the period would be made as follows:

Cash.....	10,271	
Accounts Receivable .....	15,451	
Sales Taxes Payable.....		722
Sales.....		25,000
To record sales and sales taxes for the month.		
Loss on Sales Tax Collections.....	28	
Sales Taxes Payable.....		28
To increase the sales tax liability to 3% of \$25,000, or \$750.		

### **PAYROLL TAXES AND INCOME TAX WITHHOLDINGS**

Social security and income tax legislation impose four taxes based upon payrolls:

(1) *Old-Age and Survivor Insurance.* The Federal Insurance Contributions Act, generally referred to as the federal old-age retirement legislation, provides for an equal tax on employer and employee to provide funds for old-age and survivor insurance benefits for certain classes of workers and members of their families. Benefits accrue to workers at the age of 65 and are based on the average monthly wage.

As originally enacted, the legislation provided for a tax of 1% on employer and employee to begin on January 1, 1937, with increases in rates to take effect in later years. Beginning January 1, 1951, the rate was increased to 1½%. Under current legislation, an employee contributes 1½% on wages up to \$3,600 a year received from any number of employers, although taxes in excess of \$3,600 received from two or more employers will be refunded to the employee on application. The employer pays the same rate on wages up to \$3,600 paid to each employee during the year.<sup>1</sup>

Employers of one or more persons, with certain exceptions, come under the law. Among the employment groups excluded are domestic service in a local college club or local chapter of a college fraternity or sorority; casual labor not in the course of the employer's trade or

<sup>1</sup>In January, 1953, the rate on employee and employer was still 1½%. The rate on both employee and employer is scheduled to rise to 2% on January 1, 1954, and to rise at intervals thereafter until it reaches a maximum of 3½% in 1970. However, Congress may act to postpone rate increases as was done originally in the change from 1%.

business; service performed by an individual in the employ of his son, daughter, or spouse, and service by a child under the age of 21 in the employ of a parent; services in the employ of religious, charitable, educational, and certain other agencies not conducted for profit (unless the organization and two thirds of its employees request coverage); services covered by the Railroad Employment Insurance Act; service performed as a student nurse or intern in a hospital; services performed by one under the age of 18 in the delivery or distribution of newspapers; service in the employ of the federal government, state, or political subdivision thereof, including any instrumentalities of the foregoing.<sup>1</sup>

The amount of the employee's tax is withheld from the wage payment by the employer. This amount is remitted by the employer, together with his own tax, to the Director of Internal Revenue. The employer is responsible for the tax even when he fails to withhold amounts from employees representing their contribution.

(2) *Federal Unemployment Insurance.* The Federal Social Security Act and the Federal Unemployment Tax Act provide for the establishment of unemployment insurance plans. Employers of 8 or more persons, with certain exceptions similar to those under old-age retirement legislation, are affected.

Under the law, the federal government taxes eligible employers at 3% on the first \$3,000 paid to every employee during the calendar year less a credit of up to 90% of this amount for taxes paid under state unemployment compensation laws. No tax is levied on the employee by the federal government. When an employer is subject to a tax of 2.7% or more as a result of state unemployment legislation, the tax payable to the federal government, then, is .3 of 1% of the wages. Payment to the federal government is made on or before January 31 for the preceding calendar year. The actual unemployment benefits are provided by the systems created by the individual states. Revenue of the federal government under the acts are used to meet the cost of administering state and federal unemployment plans.

(3) *State Unemployment Insurance.* State unemployment compensation laws are not the same in all states. In most states laws provide for taxes only on employers; but in a few states taxes are applied on both employers and employees. Each state law specifies the classes of employees that are exempt, the number of employees that are required or the amount of wages that must be paid before the tax

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<sup>1</sup>These were the groups excluded in January, 1953; changes in such exclusions may be made at any time.

is applicable, and the contributions that are to be made by employers and employees. In a number of states the tax is applicable only when 8 or more persons are employed, as in the case of the federal legislation; in other states the minimum number of employees ranges from 1 to 6. Exemptions are normally similar to those under the federal act. Tax payment is frequently required in the month following each calendar quarter.

While the normal tax on employers may be 2.7%, a state may provide merit rating or experience plans that provide for lower rates based upon employers' individual experience histories. Thus employers with stable employment records are taxed at a rate in keeping with the limited amount of benefits required for their employees; employers with less satisfactory employment records contribute at a rate more nearly approaching 2.7% in view of the greater amount of benefits paid to their employees. Savings under state merit systems are allowed as credits in the calculation of the federal contribution, so that the federal tax does not exceed .3 of 1% even though payment of less than 2.7% is made by an employer entitled to a lower rate under a merit rating scheme.

(4) *Income Tax Withholding.* Since 1943 federal income taxes on individuals have been collected at the time income is earned instead of in the calendar year following the earnings. With the change to the "pay-as-you-go" plan, employers were required to withhold income taxes from wages paid to their employees. Withholding is required not only of employers engaged in a trade or business, but also of religious and charitable organizations, educational institutions, social organizations, and governments of the United States, the states, the territories, and their agencies, instrumentalities, and political subdivisions. Certain classes of wage payments are exempt from withholding, although these still represent income subject to income taxes to the recipient. Employers are not required to withhold a tax on wages paid to the following classes of employees: members of the armed forces of the United States if in a combat zone; agricultural workers under certain conditions; domestic servants in a private home, local college club, or local chapter of a college fraternity or sorority; casual employees not employed in the course of the employer's trade or business; citizens or residents of the United States employed by a foreign government; citizens or residents of the United States employed outside of the United States; ministers of the gospel; public officials as to fees, but not as to salaries; employees of an international organization; certain classes of nonresident aliens who enter and leave the United States at frequent intervals.

An employer must meet withholding requirements under the law even if wages of no more than one employee are subject to such action. The amounts to be withheld by the employer are developed from formulas provided by the law or from tax withholding tables made available by the government. Withholding is based upon the length of the payroll period, the amount earned, and the number of family exemptions to which the employee is entitled. The employer reports information concerning the amounts withheld and makes payment to the Director of Internal Revenue. When the total amount withheld for old-age benefit taxes and federal income taxes does not exceed \$100 a month, payment is required on or before the last day of the month following the calendar quarter. When the total amount withheld for both types of taxes does exceed \$100 a month, payment is required in the following month.

Employees subject to withholding taxes still prepare tax returns at the end of the year. In calculating the tax liability for the year, it is determined whether any additional tax payment is due or whether amounts withheld exceed the amount due, thus calling for a refund from the government for tax overpayment.

When income from salaries and wages exceeds a certain amount or when income in excess of \$100 is received from sources not subject to withholding, such as business profits, rentals, and dividends, an individual is required to estimate in advance his income tax liability for the current year and to make quarterly payments on such estimates. A tax return is still prepared at the end of the year summarizing actual income and the tax liability; this return operates as a basis for an additional tax payment or as a claim for a tax refund.

**ACCOUNTING FOR  
PAYROLL TAXES AND  
INCOME TAX  
WITHHOLDINGS**

To illustrate the accounting procedure for payroll taxes and income tax withholdings, assume that salaries in January, 1953, for a retail store with 10 employees are \$3,000. The state unemployment compensation law provides for a tax on employers of 2.7%. Income tax withholdings for the month are \$420.

Entries for the payroll and the employer's payroll taxes follow:

Salaries and Wages.....	3,000	
Old-Age Benefit Taxes Payable.....		45
Employees Income Taxes Payable.....		420
Cash.....		2,535

To record payment of payroll of \$3,000 after deduction of 1½% for employees' contribution for federal old-age benefits and \$420 for employees' tax withholdings.

Payroll Tax Expense	135	
State Unemployment Taxes Payable		81
Federal Unemployment Taxes Payable		9
Old-Age Benefit Taxes Payable		45

To record the payroll tax liability of the employer:

- (1) State unemployment contributions — 2.7% of \$3,000, or \$81.
- (2) Federal unemployment tax — .3% (.3% less credit of 90%, or 2.7%) of \$3,000, or \$9.
- (3) Old-age benefit tax — 1½% of \$3,000, or \$45.

When tax payments are made to the proper agencies, the tax liability accounts are debited and Cash is credited.

The employer's payroll taxes, as well as the taxes withheld from employees, are based upon amounts paid to employees during the period regardless of the basis employed for measuring income. When accounting reports are prepared on the accrual basis, the employer will have to recognize both accrued payroll and the employer's payroll taxes relating thereto by adjustments at the end of the accounting period. In adjusting the accounts for accrued payroll, however, recognition of the amounts to be withheld for employees' taxes may be ignored. The entries recording the accrued payroll and the employer's payroll taxes are reversed at the start of the new period. The next regular payment of wages is recorded in the usual manner, giving recognition to the employees' taxes based upon the entire payroll and the residual amounts payable to employees; a second entry is made at this time recording the accrual of the employer's payroll taxes based upon the full amount of the payroll. The accrual of payroll and taxes at the end of the period as indicated provides accurate statements while deferring the analysis of payroll as to amounts payable to the government and to employees until the wage payment date.

Agreements with employees may provide for payroll deductions and employer contributions for such other items as group insurance plans, pension plans, savings bonds purchases, union dues, etc. The accounting procedures that are followed in these instances are similar to those already described for payroll taxes and income tax withholdings.

#### **LIABILITY UNDER BONUS AGREEMENTS**

Bonuses accruing to officers, managers, or employees at the end of a period are recorded by a charge to an operating expense account and a credit to an accrued expense balance. Such employee bonuses, even though they may be defined as a sharing of profits with an employee, are deductible expenses in the calculation of the business income taxes payable.

*Special problems frequently arise in the calculation of the amount of the bonus accruing to personnel. An agreement may provide for bonus calculation on the basis of gross revenue or sales, or on the basis of profit from business operations. When business profit is to be used, the calculation will depend upon whether the bonus is based on: (1) profit before deductions for bonus or income taxes, (2) profit after deduction for income taxes but before deduction for bonus, or (3) profit after deductions for both bonus and income taxes. To illustrate the calculations required in each of the three instances, assume the following facts: Parker Sales, Inc., gives the sales managers of its individual stores a bonus of 10% of store profit. Profit for Store No. 1 for 1953 before any charges for bonus or income taxes was \$100,000. Income taxes were 40% of net profit.*

Let B = Bonus  
T = Income Taxes

- (a) *Assuming that the bonus is based on profit before deductions for bonus or income taxes:*

$$B = .10 \times \$100,000$$

$$B = \$10,000$$

- (b) *Assuming that the bonus is based on profit after deduction for income taxes but before deduction for bonus:*

$$B = .10 (\$100,000 - T)$$

$$T = .40 (\$100,000 - B)$$

Substituting for T in the first equation and solving for B:

$$B = .10 [\$100,000 - .40 (\$100,000 - B)]$$

$$B = .10 (\$100,000 - \$40,000 + .40B)$$

$$B = \$10,000 - \$4,000 + .04B$$

$$B - .04B = \$6,000$$

$$.96B = \$6,000$$

$$B = \$6,250$$

Substituting for B in the second equation and solving for T:

$$T = .40 (\$100,000 - \$6,250)$$

$$T = .40 \times \$93,750$$

$$T = \$37,500$$

Calculation of the bonus may be proved as follows:

Profit before bonus and income taxes . . . . .	\$100,000
Deduct income taxes . . . . .	37,500
Profit after income taxes . . . . .	\$ 62,500
Bonus applied to profit after income taxes . . . . .	10%
Bonus . . . . .	\$ 6,250

(c) *Assuming that the bonus is based on profit after deductions for bonus and income taxes:*

$$B = .10 (\$100,000 - B - T)$$

$$T = .40 (\$100,000 - B)$$

Substituting for T in the first equation and solving for B:

$$B = .10 [\$100,000 - B - .40 (\$100,000 - B)]$$

$$B = .10 (\$100,000 - B - \$40,000 + .40B)$$

$$B = \$10,000 - .1B - \$4,000 + .04B$$

$$B + .1B - .04B = \$10,000 - \$4,000$$

$$1.06B = \$6,000$$

$$B = \$5,660.38$$

Substituting for B in the second equation and solving for T:

$$T = .40 (\$100,000 - \$5,660.38)$$

$$T = .40 \times \$94,339.62$$

$$T = \$37,735.85$$

Calculation of the bonus is proved in the following summary:

Profit before bonus and income taxes		\$100,000.00
Deduct: Bonus	\$ 5,660.38	
Income taxes	37,735.85	43,396.23
		<hr/>
Profit after bonus and income taxes		\$ 56,603.77
Bonus applied to profit after bonus and income taxes		10%
		<hr/>
Bonus		\$ 5,660.38

Assuming the facts in the last example, the adjusting entries to record the accrued bonus and income taxes and the closing entries to transfer expenses to Profit and Loss and to close Profit and Loss to Earned Surplus would be as follows:

Manager's Bonus	5,660.38	
Bonus Payable		5,660.38
Income Taxes	37,735.85	
Income Taxes Payable		37,735.85
Profit and Loss	43,396.23	
Manager's Bonus		5,660.38
Income Taxes		37,735.85
Profit and Loss	56,603.77	
Earned Surplus		56,603.77

#### **LIABILITY UNDER PENSION AGREEMENTS**

A company may provide for pension payments to employees by means of self-administered funds or by the payment of premiums to an insurance company that assumes responsibility for pension payments. Costs of pensions that arise from current services should be charged against

current revenue. Entries that record salaries and wages should be accompanied by entries that recognize the related pension costs and liability accruals. Pension expense should be reported on the income statement in the sections in which related payroll charges are shown.

When a pension plan is self-administered, a company normally recognizes the accrual of the pension obligations in the accounts and at the same time provides a pension sinking fund to meet such obligations. The periodic recognition of the pension benefits accruing to employees calls for a debit to a pension expense account and a credit to a pension liability account; the transfer of cash to the sinking fund calls for a debit to a pension fund cash account and a credit to Cash. The subsequent payment of pensions is recorded by a debit to the liability account and a credit to the pension fund cash account. The liability account should be given a title such as Estimated Pensions Payable or Estimated Amounts Payable under Employee Retirement System, in view of the estimated nature of the obligation reported. The liability balance would be reported as a noncurrent item, since sinking fund cash will be applied in its satisfaction.

A company that pays for a pension plan to be administered by an insurance company requires neither a sinking fund nor the recognition of a liability for accrued pensions on its books. Premiums under the pension plan accrue to the insurance company based upon the number of employees, their ages, and the benefits to be provided upon their retirement. Entries are made on the company books charging expense and crediting the insurance company for the accrual of such premiums. Payments to the insurance company are charged to the accrued liability; at the end of the fiscal period any premium accrued but unpaid is reported as a current liability.

A special accounting problem arises when a company in establishing a pension plan wishes to recognize past services of employees. Special costs are involved if benefits to be paid to retiring employees are to provide for recognition of services rendered prior to the date the pension plan is adopted. Here, one is faced with two possibilities as to the accounting treatment of the special charges attributable to past services: (1) Shall these charges be treated as extraordinary charges or direct subtractions from earned surplus on the theory that they represent costs that are related to the revenue of preceding years? (2) Shall these charges be treated as charges to revenues of the present and future periods on the theory that they represent costs that are incurred in contemplation of present and future benefits accruing to the organization? The latter position is taken by the Committee on Accounting Procedure of the American Institute of Accountants, which states:

... The element of past services is one of the important considerations of most pension plans and costs incurred on account of such services contribute to the benefits gained by the adoption of a plan. It is usually expected that such benefits will include better employee morale, the removal of superannuated employees from the payroll, and the attraction and retention of more desirable personnel, all of which should result in improved operations.<sup>1</sup>

Hence the Committee concludes:

(a) Costs of annuities based on past services should be allocated to current and future periods; provided, however, that if they are not sufficiently material in amount to distort the results of operations in a single period, they may be absorbed in the current year.

(b) Costs of annuities based on past services should not be charged to surplus.<sup>2</sup>

Following recommendations of the Institute Committee, periodic charges that arise from recognition of past services are reportable as operating expense. When recognition of past services calls for future periodic charges that are material in amount, reference should be made by statement note to future requirements under the plan. If a lump sum is paid in recognition of past services, such payment, when material, would be deferred and amortized systematically over some reasonable term.

It may be observed that for income tax purposes an employer may deduct each year an amount not to exceed 10% of the cost of funding such past services until the full cost has been recovered. This deduction may be added to the "normal cost of the plan," which is the cost of the actual pension credit arising out of the current year's active employment.

**PREPAID INCOME  
ITEMS MAKING  
CLAIM ON CURRENT  
ASSETS**

Amounts received from customers for goods and services to be provided in the future are recorded as prepaid income items. When there are significant costs involved in the course of the realization of the income and such costs are to be met from current assets presently reported, the prepaid item is properly shown as a current liability. Fees received in advance by a school and subscriptions received in advance by a publisher are current liabilities; advances received from customers on purchase orders are likewise current. When the services or the goods are applied to liquidation of the obligation, a profit or a loss emerges for the difference between the income item that has now been realized and the costs that have been applied to its realization.

<sup>1</sup>*Accounting Research Bulletin No. 36*, "Pension Plans — Accounting for Annuity Costs Based on Past Services," November, 1948 (New York: American Institute of Accountants), p. 280.

<sup>2</sup>*Loc. cit.*

**ESTIMATED  
LIABILITIES**

The valuation problem is generally a relatively minor one in the case of liabilities, since the amounts of the obligations are normally fixed by contract or accrue at a definite rate. But there are some instances when liabilities are not definitely measurable in amount at the time statements are prepared. Such claims must be estimated from whatever data may be available. The amount to be paid in the form of income taxes, for example, must be estimated in the preparation of interim statements, or at the end of the period if the tax return has not yet been prepared. While there is doubt as to the ultimate amount payable, the obligation is definite and the item requires recognition as a current liability in view of the near-term demand that it will make upon current assets. Expenditures to emerge from current activities and the realization of current income, as, for example, the cost of meeting guarantees for servicing and repairs on goods sold, call for estimates. Here the amount of the expenditures cannot be finally determined nor can the parties involved in the claims be identified; but the fact that there are costs yet to be absorbed is definite. Liabilities that are established to meet estimated costs arising from current activities are frequently referred to as *operating reserves*. The liabilities mentioned generally call for current liquidation and hence are classified under the current heading.

Certain long-term liabilities also call for estimates. It was indicated earlier that a self-administered pension plan calls for estimates as to the amount ultimately payable to employees in the form of pensions. While the ultimate requirements under the plans are not known, the fact that there is a liability is definite. Such an estimated obligation is not a claim on current resources and hence is reported as a long-term obligation.

Liabilities definite in existence but estimated in amount are commonly termed "reserves." However, it was suggested in an earlier chapter that this practice should be discouraged and account titles should be used that indicate the exact nature of the item. "Estimated Income Taxes Payable" is preferable to "Reserve for Income Taxes"; "Estimated Amounts Payable under Retirement Plans" is preferable to "Reserve for Retirement Plans." It may be noted that there has been significant progress in this direction since the issue of Accounting Research Bulletin No. 34 recommending limitation of the reserve designation to appropriations of earned surplus.<sup>1</sup>

When a separate "Reserves" heading is found in the liability section of a balance sheet, it is important to determine whether satisfactory practice has been followed with respect to presentation of items under

<sup>1</sup>Refer to Chapter 1, pp. 21 and 22, for a discussion of this bulletin.

this heading. When this classification is used, it should include only long-term estimated liabilities. Sometimes such diverse items as asset valuation accounts, short and long-term liabilities, and surplus reserves are found under this heading. When such a practice is encountered, special attention must be directed to the individual items within this category if the balance sheet position is to be properly interpreted. Special investigation is necessary when in a "Reserves" section on a balance sheet are found such account titles as "General Reserve," "Special Reserve," and "Contingency Reserve." Such designations offer no information as to the real nature of the account balance.

Representative of the classes of short-term estimated liabilities that are frequently found on financial statements are the following:

*Estimated Taxes Payable*, reporting the estimated income, state franchise, and other tax obligations not exactly determinable on the balance sheet date.

*Estimated Premium Claims Outstanding*, reporting the estimated value of prizes or premiums that are to be distributed as a result of past sales or sales promotion activities.

*Estimated Claims under Guarantees for Service and Replacements*, reporting the estimated future claims as a result of past guarantees of articles sold or service commitments.

*Estimated Claims on Tokens, Tickets, and Purchase Orders Outstanding*, reporting the estimated obligations in the form of merchandise or services arising from the receipt of cash in the past.

Some of the problems arising in the development of the balances to be reported for these classes of items are described in the sections that follow.

#### **ESTIMATED TAX LIABILITIES**

Estimates are required for all taxes that are related to current activities but that are not finally known at the time statements are prepared. Estimates may thus be called for in the case of federal income taxes, state income or franchise taxes, real and personal property taxes, and various other licenses and fees. Tax rates vary from year to year. Normally, the best guide as to current tax rates is found in rates that were applicable in the preceding period. When legislative bodies are considering revisions in tax rates and their application, such available evidence should be considered in developing estimates. When tax laws have already been finally enacted, these are applied in arriving at tax estimates. Not only may rates have to be estimated, but also the base to which such rates are applicable may require estimate. In the case of

income taxes, for example, estimates of the income subject to tax are required unless tax data are to be fully compiled before the accounting statements are drawn up. In the case of real and personal property taxes, the valuation to be assigned to properties owned may require calculation in arriving at an estimated tax liability prior to receipt of the tax bills.

Estimated taxes are recorded by a charge to an expense account and a credit to a liability account. When the actual obligation is known and is paid, the accrued balance is canceled. Any difference between the amount paid and the obligation originally recognized, if of relatively minor amount, may be reported as an operating item of the current period; if the difference is material, it should be recognized as an extraordinary item or as an adjustment to Earned Surplus.

Real and personal property taxes frequently give rise to special problems. Accounting for such taxes is illustrated in the example that follows. Assume that the fiscal period for the Baldwin Co. is the calendar year. The fiscal period for the city in which this company is located begins on July 1 and ends on the following June 30. Real and personal property taxes are assessed in March, but bills are sent out in November covering the year commenced on July 1 and ending the following June 30. Tax payments in equal installments are due on December 5 and the following April 20. The Baldwin Co. considers the taxes to cover the city's fiscal period and hence accrues taxes on its books monthly in terms of the fiscal period of the governmental unit.

On July 1, 1953, the Baldwin Co. estimated total property taxes for the year July 1, 1953-June 30, 1954 at \$1,800. On November 4 the company received a tax bill for 1953-54 of \$1,842. Entries to record the monthly tax charges and tax payments follow:

Transaction	Entry
<b>JULY 31</b>	
Estimated taxes for 1953 54, \$1,800.	Property Taxes . . . . . 150.00
Monthly accrual, $\frac{1}{12} \times \$1,800$ , or \$150.	Estimated Property Taxes Payable. . . . . 150.00
<b>AUGUST 31</b>	
Monthly accrual (estimated).	Property Taxes . . . . . 150.00
	Estimated Property Taxes Payable. . . . . 150.00
<b>SEPTEMBER 30</b>	
Monthly accrual (estimated).	Property Taxes . . . . . 150.00
	Estimated Property Taxes Payable. . . . . 150.00

Transaction	Entry						
<b>OCTOBER 31</b>							
Monthly accrual (estimated).	<table> <tr> <td>Property Taxes</td><td>150.00</td></tr> <tr> <td>Estimated Property Taxes Payable</td><td>150.00</td></tr> </table>	Property Taxes	150.00	Estimated Property Taxes Payable	150.00		
Property Taxes	150.00						
Estimated Property Taxes Payable	150.00						
<b>NOVEMBER 30</b>							
Amount of taxes for year      \$1,842.00	<table> <tr> <td>Property Taxes</td><td>167.50</td></tr> <tr> <td>Estimated Property Taxes Payable</td><td>167.50</td></tr> </table>	Property Taxes	167.50	Estimated Property Taxes Payable	167.50		
Property Taxes	167.50						
Estimated Property Taxes Payable	167.50						
Amount chargeable to date							
4 × \$153.50 (\$1,842 ÷ 12)      \$ 614.00							
Accrual recognized to date							
4 × \$150.00                      600.00							
Tax deficiency prior periods      \$ 14.00							
Add accrual for November      153.50							
Total charge to bring accrued taxes up to date      \$ 167.50							
<b>DECEMBER 5</b>							
Payment of first installment, 50% of \$1,842, or \$921, chargeable as follows:	<table> <tr> <td>Estimated Property Taxes Payable</td><td>767.50</td></tr> <tr> <td>Property Taxes</td><td>153.50</td></tr> <tr> <td>Cash</td><td>921.00</td></tr> </table>	Estimated Property Taxes Payable	767.50	Property Taxes	153.50	Cash	921.00
Estimated Property Taxes Payable	767.50						
Property Taxes	153.50						
Cash	921.00						
July    November (accrued)      \$767.50							
December (current period)      153.50							
\$921.00							
<b>DECEMBER 31</b>							
No entry — tax charge for December recorded on December 5.							
<b>JANUARY 31</b>							
Monthly accrual.	<table> <tr> <td>Property Taxes</td><td>153.50</td></tr> <tr> <td>Property Taxes Payable</td><td>153.50</td></tr> </table>	Property Taxes	153.50	Property Taxes Payable	153.50		
Property Taxes	153.50						
Property Taxes Payable	153.50						
<b>FEBRUARY 28</b>							
Monthly accrual.	<table> <tr> <td>Property Taxes</td><td>153.50</td></tr> <tr> <td>Property Taxes Payable</td><td>153.50</td></tr> </table>	Property Taxes	153.50	Property Taxes Payable	153.50		
Property Taxes	153.50						
Property Taxes Payable	153.50						
<b>MARCH 31</b>							
Monthly accrual.	<table> <tr> <td>Property Taxes</td><td>153.50</td></tr> <tr> <td>Property Taxes Payable</td><td>153.50</td></tr> </table>	Property Taxes	153.50	Property Taxes Payable	153.50		
Property Taxes	153.50						
Property Taxes Payable	153.50						



certificates. In certain instances the premium offer may call for a cash remittance representing only a small fraction of the value of the premium made available.

If a premium offer expires at the end of the company's fiscal period, adjustments in the accounts are not required. Premium requirements are fully met and the premium expense account summarizes the full premium cost chargeable against revenue of the period. However, when a premium offer is continuing, accounts at the end of the period must be adjusted to reflect the claim for premiums that is estimated outstanding as of this date. Premium Expense is debited and an appropriate liability account is credited; the expense is thus charged to the period that benefits from the premium plan and current liabilities reflect the claim for premiums outstanding. If premium distributions are charged to expense, the liability balance may be reversed at the start of the new period.

To illustrate the accounting for a premium offer, assume the following: Walker Foods offers a set of breakfast bowls upon the receipt of ten certificates, one certificate being included in each large-size package of the cereal distributed by this company. The cost of each set of bowls to the company is \$1. It is estimated that 40% of the coupons will be redeemed. Transactions and entries for 1953 and 1954 are:

Transaction	Entry
1953	
Premium purchases:	Premiums -
10,000 sets @ \$1	Bowl Sets 10,000
	Cash 10,000
Sales - large-size packages:	Cash 120,000
200,000 @ \$.60	Sales 120,000
Premium redemptions:	Premium Expense 6,000
60,000 certificates, or 6,000 sets	Premiums
@ \$1	Bowl Sets 6,000
DECEMBER 31, 1953	
Coupons estimated redeemable in	Premium Expense 2,000
future periods:	Estimated Premium
Redeemable as a result of	Claims Outstanding 2,000
current year's issue - 40%	
of 200,000 80,000	
Redemptions in 1953 60,000	
Redeemable in future	
periods 20,000	
Estimated claim outstand-	
ing: 2,000 sets @ \$1 \$ 2,000	

Transaction	Entry
1954	
Reversal of accrued liability balance.	Estimated Premium Claims Outstanding. 2,000 Premium Expense. 2,000
Premium purchases: 7,500 sets @ \$1	Premiums — Bowl Sets 7,500 Cash 7,500
Sales — large-size packages: 250,000 @ \$.60	Cash 150,000 Sales 150,000
Premium redemptions: 90,000 certificates, or 9,000 sets @ \$1	Premium Expense 9,000 Premiums — Bowl Sets 9,000
DECEMBER 31, 1954	
Coupons estimated redeemable in future periods:	Premium Expense 3,000 Estimated Premium Claims Outstanding 3,000
Redeemable as a result of prior year's issue 20,000	
Add number redeemable as a result of current year's issue — 40% of 250,000 100,000	
Total 120,000	
Redemptions in 1954 90,000	
Redeemable in future periods 30,000	
Estimated claim outstand- ing: 3,000 sets @ \$1 \$ 3,000	

Periodic accounting reports will reflect data as summarized below:

Balance Sheet	1953	1954
Current asset:		
Premiums Bowl		
Sets (4,000 sets @ \$1) \$ 4,000	(2,500 sets @ \$1) \$ 2,500	
Current liability:		
Estimated Premium		
Claims Outstanding (20,000 certificates) \$ 2,000	(30,000 certificates) \$ 3,000	
Income Statement		
Sales (200,000 @ \$.60) \$120,000	(250,000 @ \$.60) \$150,000	
Selling Expenses		
(Premium Expense) (\$6,000 + \$2,000) \$ 8,000	(\$9,000 + \$3,000 — \$2,000) \$ 10,000	

Obviously, experience that indicates a redemption percentage that differs from the assumed rate will call for appropriate corrections and the revision of future redemption estimates.

**ESTIMATED LIABILITY  
UNDER GUARANTEES  
FOR SERVICE AND  
REPLACEMENTS**

Some companies agree to provide free service on units that fail to perform satisfactorily or to replace goods that prove defective. When agreements are considered to involve only minor costs, it may be decided to recognize such costs in the periods in which they emerge. When agreements are considered to involve significant amounts, estimates of the costs involved in meeting such obligations are in order. Such estimates are recorded by a charge to an appropriate expense account and a credit to an appropriate liability account. Subsequent costs of fulfilling guarantees calling for services or replacements are charged to the liability account. The anticipation of costs results in charges to the period that is credited for the revenue and the recognition of the obligation that is outstanding.

In certain cases a special charge is made for a service or replacement guarantee covering a specific period. In such cases, a prepaid income account is credited for the amount charged. Expenses and losses in meeting contract requirements are charged to expense, while the prepaid income balance is recognized as income over the guarantee period. Recognition of income in excess of expenses indicates a net gain on such service agreements; income that is less than expenses indicates a net loss from such special activity. The prepaid income balance is properly shown within the current liability classification in view of the claim that it makes upon current assets.

**ESTIMATED LIABILITY  
ON TICKETS, TOKENS,  
AND PURCHASE  
ORDERS OUTSTANDING**

Many companies sell tickets, tokens, certificates, etc., that entitle the owner to services or goods. For example, railroads issue tickets that are used for travel; local transit companies issue tokens that are good for fares; department stores sell gift certificates that are redeemable in merchandise by bearers.

When instruments redeemable in services or goods are outstanding at the end of the period, accounts should be adjusted to reflect such claims. The adjustment will depend upon the entries that were originally made in recording the sale of the instruments.

Ordinarily, the sale of instruments redeemable in services or goods is recorded by a debit to Cash and a credit to a liability account. As instruments are redeemed, the liability balance is debited and an income account is credited. Certain claims may be rendered void by lapse of time or for some other reason as defined by the sales agreement. In addition, experience may indicate that a certain percentage of out-

*standing claims will never be presented for redemption. These factors require consideration at the end of the period. At this time, the liability balance is reduced to the balance of the claim estimated to be outstanding and income is credited for the gain that is indicated from the forfeitures.*

To illustrate the accounting for outstanding tickets, tokens, certificates, etc., assume that a service station sells books consisting of 20 coupons, each coupon redeemable for one quart of oil. Coupon books are sold for \$4.50. It is estimated that 10% of the coupons will never be redeemed. Transactions and entries for 1953 follow:

Transaction	Entry
1953	
Sale of coupon books: 400 at \$4.50 (8,000 coupons valued at \$.225 each)	Cash . . . . . 1,800 Redeemable Oil Coupons . . . . . 1,800
Coupon redemptions: 5,000 coupons at \$.225	Redeemable Oil Coupons 1,125 Sales . . . . . 1,125
DECEMBER 31, 1953	
Outstanding coupons never to be pre- sented for redemption, estimated at 10% of 8,000, or 800 at \$.225	Redeemable Oil Coupons 180 Sales . . . . . 180

Accounting reports will reflect the following for 1953:

Balance Sheet:	
Current liabilities — Redeemable Oil Coupons (2,200 at \$.225) . . . . .	\$ 495
Income Statement:	
Sales (5,800 coupons at \$.225) . . . . .	\$1,305

If Sales is credited for the sale of books, the adjustment required at the end of the period calls for a debit to Sales and a credit to a liability account for the claims estimated to be outstanding. This entry is reversed at the beginning of the new period. Using data in the example above, entries are made as follows:

Transaction	Entry
1953	
Sale of coupon books: 400 at \$4.50 (8,000 coupons valued at \$.225 each)	Cash . . . . . 1,800 Sales . . . . . 1,800
Coupon redemptions: 5,000 coupons at \$.225	Memorandum entries: Redeemed 5,000 coupons

Transaction	Entry
DECEMBER 31, 1953	
Outstanding coupons estimated to be presented for future redemption:	Sales . . . . . 495
Coupons sold . . . . . 8,000	Redeemable Oil
Deduct: Redemptions 5,000	Coupons. . . . . 495
Amount never to be presented for redemption, estimated at 10% of 8,000	
800	
Future redemptions	
2,200	
Estimated claim:	
2,200 coupons at \$.225	\$ 495

### CONTINGENT LIABILITIES

Contingent liabilities represent liabilities that may arise as a result of certain past activities or current conditions. While at the date of the balance sheet there is no legal liability, reference must be made to the possibility of such claims materializing in the future if the company's financial condition is to be fully shown. If a contingent liability should become an actual liability, it is recognized in the accounts as such at the later date, and an asset account, loss account, or Earned Surplus, whichever is appropriate, is debited.

Some of the contingent liabilities that are frequently encountered and that call for recognition on the balance sheet are described in the following paragraphs.

*Notes Receivable Discounted and Accounts Receivable Assigned.* The discounting of customers' notes and the assignment of customers' accounts involves a liability on the part of the transferor for payment of the claim in the event that the original debtor fails to make settlement. In the event that a liability ultimately materializes and requires payment, such a payment gives rise to a claim against the original debtor. The emergence of an obligation thus creates a receivable. Subsequent recovery of such a claim will be compensation for the required payment; failure to recover such a claim calls for the recognition of a loss.

*Accommodation Endorsements.* A party may become an accommodation endorser on a note by endorsing it for purposes of transfer. Such an endorsement creates a contingent liability as in the preceding discussion, and any ultimate payment on such an instrument should be treated as described above. If a person signs an accommodation note as maker, an entry should be made charging the party accommodated

and crediting Notes Payable. These balances are closed if the accommodated party makes proper settlement on the note at maturity; if the accommodation maker is required to make settlement on the note, he will attempt to recover from the party originally accommodated.

*Lawsuits Pending.* When there are lawsuits pending and advice of counsel indicates doubt as to the outcome of such suits, these may be regarded as contingent liabilities. In the event that it is reasonable to assume that certain suits will ultimately result in judgments against the company, an estimate of the amounts payable should be made. The estimated liability is recorded by a debit to a nominal account reporting such a charge or to Earned Surplus and a credit to an appropriately titled liability account.

*Additional Taxes.* Certain tax items may be under review by tax authorities, giving rise to the possibility of additional tax assessments. Additional assessments, if incurred, are recorded by a debit to a nominal account reporting such a charge or to Earned Surplus.

*Guarantee of Debt Service of Affiliated Companies.* A company may guarantee the payment of interest and principal on long-term debt of related companies. If this contingency materializes and payments are required, such obligations will be accompanied by claims against the company whose obligations were assumed.

*Customer Service Guarantees.* In many instances, service or replacement guarantees may be considered of a contingent nature rather than calling for the recognition of a liability of a stated amount. In the event that such charges are subsequently incurred, expense or Earned Surplus is debited.

*Customer Guarantees Against Price Declines.* Guarantees may be made to customers for refunds on goods purchased in the event of price declines or other named contingencies. When conditions develop that call for customer reimbursement, a nominal account or Earned Surplus is charged and customers' accounts are credited.

## **REPORTING CONTINGENT LIABILITIES**

Contingent liabilities are generally reported on the balance sheet by means of (1) parenthetical remarks, (2) accompanying notes, or (3) descriptions under a special contingent liabilities heading. When the third method is used and amounts are indicated, the amounts are reported "short," that is, they are not included in the totals on the liability side since they have not been established as obligations on the balance sheet date. When a lengthy explanation is required in fully

defining the contingent claim, such an explanation is best provided by the second method above.

To illustrate the use of these methods, assume that a company with notes receivable of \$40,000 has had \$25,000 of these notes discounted as of the balance sheet date. If Notes Receivable Discounted is credited when notes are discounted, the subtraction of this item from notes receivable on the balance sheet reveals the existence of the contingent liability and no other reference is required. However, in the absence of a notes receivable discounted balance, information may be directed to the existing contingent liability through one of the following methods.

(1) *Recognition by means of a parenthetical remark:*

Notes receivable (the company is contingently liable on notes of \$25,000 that have been discounted)	15,000
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(2) *Recognition by means of a footnote or note accompanying the statement:*

Notes receivable (See Note 1)	15,000
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Note 1 — The company is contingently liable on customers' notes of \$25,000 that have been discounted.

(3) *Recognition by means of description under a separate heading with amount entered short:*

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Current assets:		Current liabilities:	
Notes receivable	15,000	Accounts payable	60,000
		Contingent liabilities:	
		Notes receivable discounted	25,000
			<u>25,000</u>
		Long-term debt:	
		Bonds payable	100,000
		Total liabilities	160,000

### CONTINGENT CLAIMS CALLING FOR SURPLUS APPROPRIATIONS

When a liability is certain and of a definite amount, it is presented as a part of the creditors' equity. When it is certain but of an indefinite amount, it is still presented as a part of the creditors' equity, although it is designated as an estimate. When the liability is uncertain, it is reported as a contingent liability. In the latter instance management may authorize an appropriation of surplus when a substantial loss may materialize. Such action will preserve earnings within the business to absorb the loss if it develops. A surplus appropriation to cover possible losses arising in connection with con-

tingent claims is frequently designated as a reserve for contingencies. This balance remains a part of the corporate capital only so long as the liability to which it relates is only of a contingent nature. If the liability fails to materialize, the appropriated surplus is returned to Earned Surplus. If the liability does materialize, the loss should be charged to a nominal account or to Earned Surplus. Appropriated surplus is then returned to Earned Surplus, where it will serve to offset the loss. The direct application of the loss against the appropriated surplus balance would not be proper; such action would serve to bury the loss without recognition on either the income statement or the earned surplus statement.

**CURRENT AND  
CONTINGENT  
LIABILITIES ON THE  
BALANCE SHEET**

The nature of the detail to be presented for current liabilities depends upon the use that is to be made of the statement. A balance sheet prepared for stockholders might report little detail; on the other hand, creditors may insist on full information concerning current debt.

Current assets are normally recorded in the order of their liquidity, and consistency would suggest that liabilities be reported in the order of their maturity. The latter practice may be followed only to the extent that it is practical; observance of such procedure would require an analysis of the various classes of current claims and separate reporting of elements with varying maturity dates. A bank overdraft is normally listed first in view of the immediate demand that it makes on cash.

Current liabilities should not be reduced by assets that are to be applied to their liquidation, except for the reduction of the federal income tax liability balance by U. S. tax notes; however, disclosure as to future action may be provided by appropriate parenthetical reference or remark. Disclosure by similar means is made of liabilities that are secured by certain assets.

Contingent liabilities, when presented in a separate section on the balance sheet, are preferably reported immediately after the current liabilities in view of the fact that such claims, if they materialize, normally call for current liquidation.

Foregoing discussions dealt with liabilities as of the balance sheet date, both current and contingent. When business commitments have been made that will result in liabilities, material in amount, in succeeding periods, some brief reference to such future claims should be made. Commitments for the purchase of goods, services, and equipment, and for the construction, purchase, or lease of properties, for example, may warrant disclosure by appropriate note accompanying the statement.

Current and contingent liabilities sections on a balance sheet prepared on December 31, 1953, might appear as shown below:

### LIABILITIES

#### Current liabilities:

##### Notes payable:

Issued to trade creditors.....	\$12,000	
Issued to banks (secured by assignment of moneys to become due under certain contracts totaling \$36,000 included in asset section) ....	20,000	
Issued to officers.....	10,000	
Other.....	2,500	\$44,500

##### Accounts payable:

Trade creditors.....	\$30,500	
Credit balances in customers' accounts.....	1,250	
Miscellaneous.....	3,500	35,250

Long-term debt installments due in 1954.....		10,000
Cash dividends payable.....		4,500
Estimated federal income taxes payable.....	\$16,000	
Less U. S. Treasury tax notes held for payment of income taxes.....	10,000	6,000

##### Accrued expenses:

Salaries and wages.....	\$ 1,250	
Real and personal property taxes.....	800	
Other taxes and licenses.....	750	
Miscellaneous accruals.....	1,400	4,200

##### Other:

Customers' advance payments.....	\$ 7,500	
Estimated cost of guaranteed services on ma- chines sold.....	2,500	10,000

Total current liabilities.....		\$114,450
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#### Contingent liabilities:

Guarantors on employees' loans.....	\$ 7,500	
Customers' drafts discounted.....	12,000	
Additional income tax assessments proposed by the Treasury Department for 1951 that are being protested by the company.....	4,500	
Total contingent liabilities.....	\$24,000	

## QUESTIONS

1. (a) Distinguish between current and noncurrent liabilities. (b) Suggest the major classifications for current liabilities.
2. "Contingent claims require careful consideration in the evaluation of a company's current position." Explain.
3. (a) The Murdoch Co. shows current notes and accounts payable on the balance sheet at one sum, \$115,000. What objections do you have to such reporting? (b) How would you suggest that notes and accounts be classified on the statement?
4. (a) What is meant by a liability that is secured? (b) How is this reported on the balance sheet?
5. When a portion of a bond issue matures currently, how would you recommend that maturing and long-term portions of the issue be reported?
6. (a) What are the rates that are currently effective on employer and employee in connection with federal old-age and survivor insurance? (b) What are the rates that are currently effective on employer and employee in connection with federal unemployment insurance and unemployment insurance in your state? (c) How many employees are required for purposes of the foregoing taxes?
7. The sales manager for the Midwest Sales Co. is entitled to a bonus of "12½% of profits." What difficulties may arise in the interpretation of this profit-sharing agreement?
8. The Wyoming Co. and union officials agree to the establishment of a pension plan that will recognize past services of all personnel currently employed. What are the possible treatments in the accounts for the special pension costs attributable to such past services? Give reasons in support of each of the treatments suggested.
9. What determines whether a prepaid income balance is to be reported under the current liabilities heading or under the deferred credits heading on the balance sheet?
10. Give five examples of prepaid income items properly reported as current liabilities.
11. Give three examples of estimated liabilities of a short-term character and three examples of estimated liabilities of a long-term character.
12. What is an operating reserve? Give an example of an operating reserve and indicate the entries that are required in its establishment and in its use.
13. The American Accounting Association has recommended that the balance sheet should contain no special section for reserves, and that each reserve should be reported as a valuation account, as a liability, or as a subdivision of retained income. What arguments can you give for and against this recommendation?

**14.** What accounting procedures would you recommend for the monthly recognition of your local real and personal property taxes?

**15.** What entries are made for a premium offer (a) when the plan is established and sales are made, and (b) when premium redemptions are made?

**16.** (a) What accounting procedures would you recommend for a bus system that sells coupon books and tokens that are used for travel? (b) How would you take care of the problem of unrepresented coupons and tokens?

**17.** (a) Define contingent liabilities. (b) Give five examples of contingent liabilities. (c) Indicate for each example in (b) the accounting treatment to be followed in the event that a real liability emerges from the item previously considered of a contingent nature.

**18.** What methods may be employed on the balance sheet for disclosure of contingent liabilities?

**19.** When in your opinion would a contingent liability suggest appropriation of earned surplus?

**20.** (a) When in your opinion would commitments for future expenditures call for special disclosure? (b) How would you recommend that such disclosure be made?

**21.** Where would each of the following items be reported on the balance sheet?

- (a) Bank overdraft.
- (b) Cash dividends declared.
- (c) Dividends in arrears on preferred stock.
- (d) Estimated income taxes.
- (e) Insurance premiums received in advance for a 5-year period by an insurance company.
- (f) Stamps that were issued and that are redeemable by customers for certain premiums.
- (g) Deposits received in connection with meter installations by a public utility.
- (h) Personal injury claim pending.
- (i) Notes receivable discounted.
- (j) Current maturities of a serial bond issue.
- (k) Customer accounts with credit balances.
- (l) Purchase money obligation maturing in five annual installments.
- (m) Purchase certificates sold to customers but not yet presented for redemption.
- (n) Service guarantees on equipment sales.
- (o) Accommodation endorsement on a note issued by an affiliated company.
- (p) Contract entered into with contractors for the construction of a new building.
- (q) Stock dividend payable.

## EXERCISES

1. During the first quarter of 1953 the Monarch Retail Company sold merchandise on account for \$38,500, to which were added sales taxes totaling \$1,150. The total cash sales were \$27,833, on which sales tax collections were \$858. What entries would be made (a) to record the sales and (b) to adjust the sales tax liability account to 3% of sales at the end of the quarter?

2. Richard Rice, public accountant, has 4 employees. The weekly payroll is \$400. Give the entries to record payment of the salaries if: (a) the employer is responsible for remitting 3% quarterly to the Federal Government for old-age benefits,  $1\frac{1}{2}\%$  being deducted from employees' salaries and  $1\frac{1}{2}\%$  representing the employer's contribution; (b) the employer is responsible for remitting a total of 3.7% to the State of California quarterly, 1% being deducted from employees' salaries and 2.7% representing the employer's contribution; and (c) income tax withholdings are calculated at \$85.

3. The Armstrong Shop paid \$1,716 cash to its 9 employees for services rendered in January, 1953. Assuming that the income tax withholdings averaged 20.5% for the entire payroll and that the only other deductions were for old-age benefits taxes, give the journal entries to record the payroll data for January.

4. The Jensen Co. has an agreement with its sales manager whereby the latter is entitled to 5% of company profits as a bonus. Company profit for a calendar year before bonus and income taxes is \$60,000. Income taxes are 40% of profit. What is the amount of the bonus under each of the conditions below:

- (a) The bonus is calculated on profit before deductions for bonus and income taxes?
- (b) The bonus is calculated on profit after deduction for income taxes but before deduction for bonus?
- (c) The bonus is calculated on profit after deductions for both bonus and income taxes?

5. The Walsh Co. is advised by insurance company representatives at the beginning of 1953 that the cost of establishing a certain pension plan with full recognition of past services of all present employees is \$450,000. Pension premium costs for 1953 will be \$40,000. Give all of the journal entries that will appear on the books of the Walsh Co. in 1953, assuming that:

- (a) The full cost of the pension plan is paid in 1953, but costs recognizing past services are considered chargeable in equal installments over a 10-year period.
- (b) The cost of recognizing past services is to be paid to the insurance company in 10 equal annual installments, and the company wishes to show the full amount payable on the plan as a liability on the balance sheet.

6. The Master Service Station sells for \$12.50 a book that contains 10 coupons, each coupon being good for one automobile lubrication job. During 1953, 400 such books were sold. During the year, 3,250 coupons were collected by the station for work done. (a) What entries would be made to record the foregoing? (b) What data would appear on the balance sheet and the income statement prepared at the end of 1953?

7. The Wakefield Co. includes 1 coupon in each box of soap powder that it packs, 10 coupons being redeemable for a premium consisting of a kitchen utensil. In 1953, the Wakefield Co. purchases 5,000 premiums at 65 cents, and sells 80,000 boxes of soap powder. 15,000 coupons are presented for redemption. It is estimated that 60% of the coupons issued will be presented for redemption. What entries would be made relating to the premium plan in 1953?

8. Prepare the current liabilities section of the balance sheet for the Forrester Corporation on December 31, 1953, from the information that appears below:

Notes payable: arising from loans to banks, \$15,000, on which marketable securities valued at \$19,500 have been pledged as security; arising from purchases of goods, \$28,500; arising from advances by officers, \$10,000.

Accounts payable: arising from purchases of goods, \$22,000.

Cash balance with Farmers Bank, \$6,500; cash overdraft with Merchants Bank, \$8,750.

Dividends in arrears on preferred stock, \$12,000.

Income tax withholdings payable, \$650.

First-mortgage serial bonds, \$100,000, payable in semiannual installments of \$5,000 due on March 1 and September 1.

Advances received from customers on purchase orders, \$1,500.

Customers' accounts with credit balances arising from purchases returns, \$900.

Estimated damages to be paid as a result of unsatisfactory performance on a contract, \$1,200.

Estimated costs of meeting guarantee for service requirements on goods sold, \$3,600.

## PROBLEMS

11-1. The Wallace Manufacturing Company manufactures a cake mix flour that is packaged and sold. A cake knife is offered to customers sending in 2 box tops from these packages accompanied by a remittance of 50 cents. Data with respect to the premium offer are summarized below:

	1952	1953
Cake mix sales (65¢ per package) . . . . .	\$130,000	\$162,500
Cake knife purchases (75¢ per knife) . . . . .	9,375	7,500
Number of knives distributed as premiums . . . . .	8,000	13,500
Estimated number of knives to be distributed in subsequent periods . . . . .	2,000	4,000

*Instructions:* (1) Give the entries that would be made in 1952 and 1953 to record product sales, premium purchases and redemptions, and year-end adjustments.

(2) List the account balances that will appear on the balance sheet and the income statement at the end of 1952 and 1953 as a result of the foregoing.

**11-2.** Western Television, Inc. sells a television warranty policy covering all parts and labor for \$50 per year. Warranties begin as of the first of the month following issuance of the policy. Policies were first issued in September, 1952. In reviewing the records before closing the accounts for 1953, you find that income and expenses on such contracts have been recognized in 1952 and 1953 on the cash basis. The accounts show income and expenses for the two years as follows:

	INCOME		EXPENSES	
	1952	1953	1952	1953
January.....		\$ 4,950		\$ 1,600
February.....		4,800		1,850
March.....		4,350		1,900
April.....		4,200		2,350
May.....		4,800		2,700
June.....		3,300		2,800
July.....		3,000		2,950
August.....		2,850		3,000
September.....	\$ 1,500	3,000		3,050
October.....	2,250	3,450	\$ 350	3,250
November.....	3,000	3,600	850	3,100
December.....	3,450	3,600	1,250	3,000
	<u>\$10,200</u>	<u>\$45,900</u>	<u>\$ 2,450</u>	<u>\$31,550</u>

*Instructions:* (1) List monthly income, expenses, and net income balances for 1952 and 1953, assuming that proper recognition is given to deferred income on the service policies. (Submit working paper summaries that show calculation of the monthly income figures listed.) -

(2) Assuming that accounting statements are to be prepared for 1953 that report the earnings with appropriate recognition of deferred income at the beginning and the end of the period, give (a) the correcting entry to be made in recognition of the deferred income balance at the beginning of the year and (b) the adjusting entry to be made in recognition of the deferred income balance at the end of the year.

**11-3.** The Murphy Co. has an agreement with its sales manager whereby the latter is entitled to 15% of the company profit as an annual bonus. Company profit for a calendar year before calculating the bonus and the income taxes is \$80,000. Income taxes are 40% of the profits after bonus.

*Instructions:* Calculate the amount of the bonus and the income taxes, assuming each of the conditions stated below:

- (1) The bonus is calculated on the profit before deductions for bonus and income taxes.
- (2) The bonus is calculated on the profit after deduction for income taxes but before deduction for bonus. Prove your answer.
- (3) The bonus is calculated on the profit after deductions for both bonus and income taxes. Prove your answer.

**11-4.** The real and personal property taxes paid by the Weber Co. for 1951-1952 were \$1,085. The taxes cover the city and county's fiscal year period, July 1, 1951-June 30, 1952, and the company follows the policy of accruing taxes over the fiscal period of the tax authority. The company has made property improvements and estimates the tax for 1952-1953 at \$1,350. On October 15, 1952, the company receives its tax bill reporting a liability of \$1,530. The assessment is protested. The company pays 50% of the tax bill on December 5, 1952. On March 20, 1953, the company is advised that its tax liability for 1952-1953 was reduced to \$1,380. The balance of the amount due, \$615, is paid on April 20.

*Instructions:* Give the entries relating to the property taxes that will appear on the books of the Weber Co. over the period July 1, 1952-June 30, 1953, including monthly adjustments that are required for the preparation of monthly accounting reports.

**11-5.** The following data are made available for purposes of stating the financial position of the Bradford Co. on December 31, 1953:

Cash in bank . . . . .	\$21,350
Petty cash, which includes IOU's of employees totaling \$150 that are to be repaid to petty cash . . . . .	500
Marketable securities, valued at \$40,500, securities valued at \$12,500 having been pledged on a note payable to the bank for \$10,000, reported on books at cost . . . . .	38,850
Notes receivable, which have been reduced by notes discounted of \$12,000 that are not yet due and on which the company is contingently liable . . . . .	14,500
Accounts receivable, which include accounts with credit balances of \$250 and past-due accounts of \$3,250 on which a loss of 50% is anticipated . . . . .	32,100
Merchandise inventory, which includes goods held on a consignment basis, \$3,600, and goods received on December 31, \$2,150, neither of these items having been recorded as a purchase . . . . .	26,600
Prepaid insurance, which includes cash surrender value on life insurance policies on officers of \$6,500 . . . . .	7,250
Furniture and fixtures, which include fixtures that were fully depreciated and that have just been scrapped, \$3,600 Cost . . . . . \$12,500 Allowance for depreciation . . . . . 8,250	4,250
Notes payable, which are trade notes with the exception of a 6-month, \$10,000 note discounted at the bank on November 1 at 6% . . . . .	25,800
Accounts payable, which include accounts with debit balances of \$315 . . . . .	27,400
Miscellaneous accrued expenses, which include \$3,500 representing estimated costs of premiums in connection with a special sales offer made in December . . . . .	9,150
Long-term notes, which are payable in annual installments of \$2,500 on February 1 of each year . . . . .	7,500

6% cumulative preferred stock, \$10 par, on which dividends for 3 years are in arrears.....	\$50,000
No-par common stock, 40,000 shares authorized and outstanding.....	40,000
Surplus (debit balance).....	14,450

The following data are not reflected in the above account balances:

- (1) A suit has been filed against the company for \$50,000; legal counsel has informed the company that while it is probable that the company will lose the suit, the award for damages will not be in excess of \$15,000.
- (2) There are replacement guarantees outstanding that are estimated to result in costs to the company of \$5,000.

*Instructions:* Prepare a classified balance sheet, including whatever notes are appropriate in support of balance sheet data.

**11-6** The trial balance of the Morris Corporation on December 31, 1953, before adjustments, is as follows:

	DR.	CR.
Cash.....		1,250
Notes Receivable.....	14,450	
Accounts Receivable.....	42,000	
Merchandise Inventory, January 1, 1953.....	31,000	
Selling Supplies.....	600	
Prepaid Insurance.....	650	
Fixtures.....	12,000	
Buildings.....	50,000	
Allowance for Depreciation of Buildings.....		6,000
Land.....	30,000	
Accounts Payable.....		12,750
Payroll Taxes Payable.....		275
Employees Income Taxes Payable.....		400
5% Mortgage Payable.....		12,000
6% Bonds Payable (due 1966).....		20,000
7% Preferred Stock.....		50,000
Common Stock.....		50,000
Earned Surplus, January 1, 1953.....		4,850
Sales.....		164,000
Rental Income.....		6,000
Purchases.....	95,000	
Selling Expenses.....	28,000	
General Expenses.....	24,000	
Sales Discount.....	1,050	
Interest Expense.....	1,000	
Purchases Discount.....		1,700
Interest Income.....		525
	329,750	329,750

On December 31, 1953, the following facts are determined from the records:

- (1) The mortgage is secured by the land and buildings and is due on February 1, 1954. Interest is payable annually on February 1.
- (2) Bond interest is payable semiannually on March 1 and September 1.
- (3) The preferred stock is cumulative, and no dividends have been declared for 1951, 1952, and 1953.
- (4) Selling Expenses includes salaries and wages of \$17,000. General Expenses includes salaries and wages of \$16,000. During 1953 the salaries paid in each quarter of the year were as follows:

	JAN. 1- MAR. 31	APRIL 1- JUNE 30	JULY 1- SEPT. 30	OCT. 1- DEC. 31
Selling Expense	\$3,000	\$4,000	\$3,000	\$7,000
General Expense	4,000	4,000	4,000	4,000

Federal old-age benefit taxes of  $1\frac{1}{2}\%$  and state unemployment compensation taxes of  $2.7\%$  were paid during the first three quarters of the year. The account Payroll Taxes Payable was credited for the deductions from employees' wages (deductions of  $1\frac{1}{2}\%$  for federal old-age benefit taxes and  $1\%$  for state unemployment taxes were made). The employer's liability under federal old-age benefit and state unemployment legislation for the last quarter has not been recorded; the employer's liability for the federal unemployment taxes for the entire year has not been recorded.

- (5) The state in which the Morris Corporation is located has a sales tax of  $2.5\%$  of sales, which is to be remitted by the retailer within a month following collections. During December, Sales was credited for \$11,655, which included sales tax collections.
- (6) The notes receivable accrue interest at  $6\%$  at their maturity on June 30, 1954, and were received on June 30, 1953.
- (7) The fixtures were purchased on January 2, 1953, on a conditional sales contract. The amount of fixtures purchased was \$25,000; \$13,000 is unpaid, of which \$6,500 will be due on July 1, 1954, and \$6,500 on July 1, 1955.
- (8) Rental Income shows the amount received for the rental of a department in the store for a 2-year period beginning October 1, 1953.
- (9) Accounts receivable are analyzed and it is decided to set up an allowance for \$820, the estimated loss from bad debts.
- (10) When property taxes of \$1,400 were paid during 1953, Selling Expenses and General Expenses were charged with equal amounts. These taxes cover the year July 1, 1953, to June 30, 1954.
- (11) Depreciation of fixtures is  $10\%$  annually (chargeable  $\frac{1}{2}$  to Selling Expenses and  $\frac{1}{2}$  to General Expenses).
- (12) Depreciation of buildings is  $4\%$  annually (chargeable  $\frac{1}{2}$  to Selling Expenses and  $\frac{1}{2}$  to General Expenses).
- (13) Merchandise inventory on December 31, 1953, is \$27,000. This amount includes merchandise of \$2,000 for which an invoice has not been received and no entry has been made.
- (14) An examination of the insurance policies shows that the amount prepaid is \$350 (expense is chargeable  $\frac{1}{2}$  to Selling Expenses and  $\frac{1}{2}$  to General Expenses).
- (15) Selling supplies of \$200 are on hand.
- (16) Provision is to be made for income taxes at  $40\%$  of net income.

*Instructions:* (1) Prepare an eight-column work sheet, providing a pair of columns for (a) the trial balance before adjustments, (b) correcting and adjusting data, (c) profit and loss data, and (d) balance sheet data.

~~(2) Prepare an income statement and a balance sheet.~~

**11-7.** On October 1, 1945, the Peters Publishing Company entered into a special royalty contract for the publication of a book on a religious subject, the royalty of \$40 per 100 copies to be paid on or before October 1, 1951, on a minimum publication of 50,000 copies. It was stipulated that in the interval the payments were to be made from time to time as the books were bound and ready for sale. The Peters Publishing Company proceeded to print the minimum number of sheets and included the royalty in the sheet cost, setting up the liability therefor. Up to October 1, 1951, the royalty had been paid as agreed on the basis of 13,500 copies bound, and the balance due on the remaining 36,500 copies became due.

However, because of the slowness of the sale of the book, it was agreed on October 31, 1951, that the original contract was to be modified for the balance of the royalties, and negotiations were commenced to fix the new terms. The Peters Publishing Company, having on hand 2,840 copies of bound stock, then also decided to write off against its earned surplus all the royalty included in its inventories.

During the years 1952 and 1953 there were 1,300 additional copies sold. On December 31, 1953, there remained in the hands of the publisher 1,540 bound copies; but no further sheet stock had been bound. On that date a final arrangement was made whereby the remaining royalty liability was settled and paid at 50¢ on the dollar. Thereupon the Peters Publishing Company, in view of a revived demand for the publication, reinstated as a deferred charge the advance royalty actually paid on the stock in hand.

*Instructions:* (1) Submit a summary of the royalty liability account showing the above transactions and the final settlement.

(2) Submit the journal entry recording the adjustment of October 1, 1951, inventories.

(3) Submit the journal entry setting up the advance royalty at December 31, 1953, as a deferred charge. (A.I.A. adapted)

**11-8.** The Superior Iron Company leased an iron-ore mine for a term of 15 years on a basic royalty charge of 20¢ per ton of ore mined. A minimum of \$10,000 was to be paid to the owners each year, but the Superior Iron Company had the right to recover within the next succeeding 5 years the excess royalties paid in any one year.

At the termination of the lease all the ore had been mined as follows:

1st year . . . . .	10,000 tons	Brought forward. . .	310,000 tons
2nd year . . . . .	20,000 tons	9th year . . . . .	50,000 tons
3rd year . . . . .	40,000 tons	10th year . . . . .	70,000 tons
4th year . . . . .	40,000 tons	11th year . . . . .	150,000 tons
5th year . . . . .	60,000 tons	12th year . . . . .	130,000 tons
6th year . . . . .	70,000 tons	13th year . . . . .	140,000 tons
7th year . . . . .	30,000 tons	14th year . . . . .	110,000 tons
8th year . . . . .	40,000 tons	15th year . . . . .	40,000 tons
Carried forward . .	310,000 tons	Total . . . . .	1,000,000 tons



Your reconciliation of the bank account as of January 31, 1953, shows:

Balance per bank.....		\$ 625.77
Deduct — outstanding checks.....	\$ 271.00	
Error occurring prior to January, 1953.....	18.00	289.00
		\$ 336.77
Add — bank service charges:		
For December, 1952.....	\$ 4.08	
For January, 1953.....	3.92	8.00
Balance per books.....		\$ 344.77

The balance sheet that your client had as of December 31, 1952, was as follows:

ASSETS		
Cash.....		\$1,016.52
Furniture & fixtures.....	\$2,025.00	
Less — reserve for depreciation.....	202.50	1,822.50
		\$2,839.02
<hr/>		
LIABILITIES		
Accounts payable — food purchases.....	\$ 510.25	
Accrued 1952 personal property taxes — estimated.....	24.00	
Accrued 1952 O.A.B. and unemployment taxes.....	117.00	
Income taxes withheld.....	232.50	
Accrued 1952 annual license.....	100.00	
Proprietor's capital.....	1,855.27	
		\$2,839.02

Your investigation reveals that accounts payable should have been \$81.50 larger than stated on December 31, 1952, and that as of January 31, 1953, they amount to \$703.50. You also discover that as of January 31, 1953, there is a receivable for catering service amounting to \$75. There is an inventory of tobacco and candy at January 31, 1953, of \$130. The proprietor has no record of the inventory as of December 31, 1952, but is of the opinion that it was about \$75. He expects to take monthly inventory hereafter.

You find that the business was opened on January 1, 1952, and that all of the December 31, 1952, balance of furniture and fixtures was purchased at that time.

*Instructions:* (1) Prepare an eight-column work sheet, providing a pair of columns for (a) the trial balance before adjustments, (b) correcting and adjusting data, (c) profit and loss data, and (d) balance sheet data.

(2) Prepare an income statement and a balance sheet. (A.I.A. adapted)

## Chapter 12

# Investments Stocks

### NATURE OF INVESTMENTS

A company must invest funds in inventories, plant and equipment, and services in order to engage in the sale of goods and services. But a portion of its available funds may be applied to assets not directly identified with primary activities. Assets that occupy an auxiliary relationship to central activities are referred to as *investments*. Investments are expected to contribute to the success of the business either (1) by exercising certain favorable effects upon sales and operations generally, or (2) by making an independent contribution to business profits.

### CLASSIFICATION OF INVESTMENTS

From the standpoint of the owner, investments are either temporary or long-term. As suggested earlier, investments are classed as current only where they are readily salable and it is management's intent to use them to meet any current cash requirements. Investments that do not meet these tests are considered *long-term* or *permanent investments* and are reported on the balance sheet under the separate noncurrent heading Investments. The purpose that is to be served by the investment governs its classification.

### COMPOSITION OF LONG-TERM INVESTMENTS

Long-term or permanent investments include a variety of items. For discussion purposes, long-term investments will be classified in four groupings as follows: (1) investments in stocks, both preferred and common; (2) investments in bonds and other similar debtor instruments; (3) sinking funds for bond retirement, stock redemption, and other special purposes; and (4) miscellaneous investments including investments in unproductive land, advances to affiliates, interests in life insurance contracts, and interests in trusts, estates, and partnerships. The accounting problems relating to long-term investments in stocks are considered in this chapter. The problems relating to the remaining long-term investment classes are described in the next two chapters.

### INVESTMENTS IN STOCK

Investments may be made in corporate stock for the periodic income over the long term as well as for stock appreciation possibilities. While such investments

may involve considerable risk so far as price fluctuation is concerned, significant rewards in the way of earnings and profits are often provided. Frequently investments in stock are made to secure certain continuing business advantages. For example, stock ownership may be a means of obtaining suppliers for required materials and services or outlets for sales products. Here the income factor is only incidental to the other considerations involved in the investment. Again, ownership of a controlling interest in the voting stock of a company may be sought. With control, activities of the related companies may be integrated towards the achievement of greater profits. A company exercising control over another through majority ownership of its voting stock is called a *holding or parent company*; the company controlled is referred to as a *subsidiary company*.

Investments may be made in preferred or common stock. Preferred stock has certain preferences as to dividends and frequently as to assets upon dissolution. Sometimes such stock is convertible into some other security, usually common stock, at the option of the stockholder. When this is the case, the preferred stock maintains its preference as to dividends and is exchangeable into common stock should corporate activities prove sufficiently profitable to make the common stock the more attractive equity.

The accounting procedures relative to long-term investments in stock may be considered equally applicable to short-term or temporary stock investments except where variations in treatment are indicated. Furthermore, the procedures outlined are normally applicable in the case of an individual investor with a single holding in stock as well as in the case of investment concerns, insurance companies, or other financial enterprises with a great many stock holdings.

#### **ACCOUNTING FOR INVESTMENTS IN STOCK**

When stock is purchased for cash, it is recorded at original cost, including brokerage, taxes, and other fees incidental to the purchase. When stock is acquired "on margin," the stock should be recorded at the full cost and a liability should be recognized for the unpaid balance. To report only the amount invested would be, in effect, to offset the obligation to the broker against the investment account balance. Interest on amounts owed to the broker is charged to current expense. When stock is acquired in exchange for properties or services, the fair market value of such considerations or the value at which the stock is currently selling, whichever may be more clearly ascertainable, should be used as a basis for recording the investment. In the absence of market quotations for the security acquired or clearly defined values identified

with assets or services exchanged, the booking of the investment may raise perplexing problems as to valuation that may be resolved only by appraisals and estimates.

Although dividends on preferred stock do not legally accrue, the buyer of a new offering of preferred stock may be charged for so-called "accrued dividends." Such a charge should not be recorded as a part of the cost of the preferred stock but should appear as a deduction from the dividend to be received. To illustrate, assume that 100 shares of \$100 par 6 per cent preferred stock are purchased on March 1 at a cost of \$10,600, which includes fees, taxes, and a charge for accrued dividends from January 1 to March 1. A semiannual dividend is declared on June 10, payable July 1. Entries are made as follows:

March 1	Investment in 6%, Preferred Stock	10,500	
	Dividend Income	100	
	Cash		10,600
July 1	Cash	300	
	Dividend Income		300

When two or more securities are acquired for one lump-sum price, this cost should be allocated in some equitable manner to the different acquisitions. When independent market values are available for each security, cost may be apportioned on the basis of the relative values. When there is a market value for one security but not the other, it may be reasonable to assign the market value to the one and the cost excess to the other. If no separate values are available, it may be necessary to delay cost apportionment until such time when support for an equitable division of cost is available. In certain instances it may be desirable to carry the two securities in a single account and to treat the proceeds from the sale of one as a subtraction from total cost, the residual cost then to be identified with the other. To illustrate the foregoing procedures, assume the purchase of 100 units of preferred and common stock at \$75 per unit; each unit consists of one share of preferred and two shares of common. Assuming independent quoted prices of \$60 and \$10 per share for preferred and common shares respectively, the investment cost is recorded in terms of the relative values of the securities acquired as follows:

Investment in Preferred Stock	5,625	
Investment in Common Stock	1,875	
Cash		7,500
Value of preferred: $100 \times \$60$	\$6,000	
Value of common: $200 \times \$10$	2,000	
	<u>\$8,000</u>	

Cost assigned to preferred:  $\frac{\$6,000}{\$8,000} \times \$7,500 = \$5,625$  (cost per share:  $\frac{\$5,625}{100}$ , or  $\$56.25$ )

Cost assigned to common:  $\frac{\$2,000}{\$8,000} \times \$7,500 = \$1,875$  (cost per share:  $\frac{\$1,875}{200}$ , or  $\$9.375$ )

$\$7,500$

If only a value for preferred of \$60 is available, the investment cost is recorded as follows:

Investment in Preferred Stock .....	6,000	
Investment in Common Stock .....	1,500	
Cash .....		7,500
Cost of preferred and common .....	\$7,500	
Cost identified with preferred (market) ..	6,000	(cost per share: \$60.00)
Remaining cost identified with common ..	\$1,500	(cost per share: $\frac{\$1,500}{200}$ , or $\$7.50$ )

If the division of cost must be deferred, the following entry is made:

Investment in 100 units of Preferred and Common Stock .....	7,500	
Cash .....		7,500

This joint investment balance may be closed when a basis for apportionment is established and costs can be assigned to individual issues.

When stock is acquired subject to special calls or assessments, such payments to the corporation are recorded as additions to the costs of the holdings. Voluntary contributions by the stockholders to the corporation to enable it to eliminate a deficit, to retire bonds, or to effect a reorganization, are likewise treated as additions to investment cost.

When there are several acquisitions of the same security, care should be taken to preserve costs of the individual purchases in the accounts. As indicated earlier in the case of marketable securities, when there is a sale of part of the holdings, cost is normally arrived at by reference to costs of specific shares sold, or in the absence of such identification, by calculation by the first-in, first-out rule. This costing procedure is required by income tax laws and is also an acceptable method from an accounting point of view. Even if the cost of securities sold were to be calculated in terms of average cost on the books, it would still be necessary to preserve costs of the several security acquisitions to meet tax computation requirements.

## STOCK VALUATION

The importance of information concerning market values for temporary investments has already been described. Management's intent to use these assets as a source of cash gives support to the recognition of current market values.

But when it is management's intent to hold securities, market values and fluctuations in such values do not assume the significance that they have in the case of temporary investments. As in the case of other long-term assets, cost may be accepted as a primary basis for the valuation of securities acquired as a long-term investment. Cost valuation may be supplemented by parenthetical disclosure of the market values of long-term investments when such data are available. This practice serves to make statements more fully informative.

With a significant and apparently permanent decline in the value of long-term securities, departure from cost and the recognition of the loss that has taken place is necessary if financial position is not to be misrepresented. For example, assume that investments are held in companies that have discontinued dividends or that are facing the possibility of creditor control as a result of continued losses, or assume investments in companies in foreign countries and the outbreak of war in such countries. Cost can no longer be considered as recoverable through revenue of future periods; the serious impairment of asset values in such instances cannot be overlooked. When the investment is to be written down, this is preferably accomplished by the establishment of a valuation account so that the record of cost is preserved for tax accounting. Special valuation procedures may be employed where a long-term investment represents a controlling interest in the stock of another company. These are described later in this chapter.

## **DIVIDENDS**

The receipt of cash dividends is recorded by a debit to Cash and a credit to Dividend Income. When an earnings distribution is made in the form of assets other than cash, the property received should be recorded at its fair market value and Dividend Income should be credited.

Three dates are generally included in the formal dividend announcement: (1) date of declaration, (2) record date, and (3) date of payment. The formal dividend announcement may read somewhat as follows: "The Board of Directors at their meeting on November 5, 1953, declared a regular quarterly dividend on outstanding common stock of 50 cents per share payable on January 15, 1954, to stockholders of record at the close of business, December 29, 1953." The stockholder becomes aware of the dividend action upon its announcement. But if he sells his holdings and a new owner is recognized by the corporation prior to the record date, the dividend is paid to the new owner. If the stockholder retains his holdings until the record date, he will be entitled to the dividends when paid. After the record date, then, stock no longer

carries the dividend right and sells "ex-dividend."<sup>1</sup> Accordingly, a stockholder is justified in recognizing the corporate dividend action on the record date. At this time a receivable account may be debited and Dividend Income credited. Upon receipt of the dividend, Cash is debited and the receivable credited.

It should be pointed out that federal income tax regulations provide that dividends on corporate stock are taxable only when unqualifiedly made subject to the demand of the stockholder. Even though reporting income on an accrual basis, then, a taxpayer recognizes dividends as income only as these become available. Frequently, in accordance with income tax requirements, one finds dividends recognized on the books and statements only after they have been received. Such practice is not objectionable when followed consistently, and the regular lag in dividend recognition results in no material distortion of periodic revenues.

### STOCK DIVIDENDS

A company may decide to distribute to its common stockholders a dividend in the form of additional common stock. Such a dividend does not affect company assets but simply results in the transfer of earned surplus to capital stock. The increase in total stock outstanding is distributed prorata to individual stockholders. The receipt of additional shares by stockholders leaves their respective equities exactly as they were. While the number of shares held by individual stockholders has gone up, there are now a greater number of shares outstanding and proportionate interests remain unchanged. The division of interests into a greater number of parts cannot be regarded as giving rise to income. Only a memorandum entry needs to be made in recognizing the receipt of additional shares. Original investment cost applies to a greater number of shares, and this cost is divided by the total shares now held in arriving at the cost per share to be used upon subsequent disposition of holdings. This new cost basis is indicated in the memorandum entry.

It may be noted that market recognition of the stock dividend will result in a similar restatement of the market value of the security. For example, assume that shares sell for \$45 just before the record date for a 50 per cent dividend. Such stock would be expected to sell at a lower market in view of the action that now puts into the hands of stockholders 50 per cent more shares with no increase in company assets. After the dividend,  $1\frac{1}{2}$  shares carry the book value and represent the

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<sup>1</sup>Stock on the New York Stock Exchange is quoted ex-dividend or ex rights two full days prior to the record date because of the time required to deliver the stock, and to record the stock transfer.

equity previously attached to a single share;  $1\frac{1}{2}$  shares are now worth \$45, or each share has a value of \$30 ( $\$45 \div 1.5$ ).

When purchases of stock are made at different costs, the stock dividend will have to be related to such different purchases. Adjusted costs for shares comprising each lot held can then be developed. To illustrate, assume that H. C. Smith owns stock of the Banner Corporation acquired as follows:

	Shares	Cost per Share	Total Cost
Lot #1	50	\$120	\$6,000
Lot #2	30	90	2,700
	80		\$8,700

A stock dividend of 1 share for every 2 held is distributed by the Banner Corporation. A memorandum entry on Smith's books to report the number of shares now held and the cost per share within each lot follows:

Received 40 shares of Banner Corporation stock, representing a 50% stock dividend on 80 shares held. Number of shares held and costs assigned to shares are now as follows

	Shares	Costs per Share	Total Cost
Lot #1	75 (50 + 25)	\$80 ( $\$6,000 \div 75$ )	\$6,000
Lot #2 . .	45 (30 + 15)	60 ( $\$2,700 \div 45$ )	2,700
	120		\$8,700

These costs assume significance upon the subsequent sale of shares. The sale of the 75 shares comprising Lot 1, for example, would be charged with a cost of \$6,000. The sale of only part of the shares identified with this lot would call for use of a cost of \$80 per share. If shares sold are identified as those of Lot 2, cost would be figured at \$60 per share. Assuming that 100 shares are sold at \$100 and stock is unidentified as to lot, the following entry is made in giving effect to cost calculation on the first-in, first-out basis:

Cash	10,000	
Investment in Banner Corporation Stock		7,500
Gain on Sale of Banner Corporation Stock		2,500
Sold 100 shares, cost calculated upon the first-in, first-out basis as follows:		
75 shares at \$80	\$6,000	
25 shares at \$60	1,500	
Total cost assigned to sale	\$7,500	

The foregoing analyses assume maintenance of cost data in the investment accounts in accordance with tax requirements. The use of an average cost on the books would result in a charge of \$72.50 for each share sold ( $\$8,700 \div 120$ ). However, \$72.50 cannot be used for tax purposes, and analysis by lots as illustrated would still be required in calculating the taxable gain or loss on share dispositions.

When a stock of a class different from that held is received as a stock dividend, such a dividend, too, should not be regarded as income. As in the case of a like dividend, a portion of the surplus that had been related to the stock held and that represented a part of its book value has now been formally labeled capital stock. All owners of the stock on which the dividend is declared participate prorata in the distribution. The respective equity of each owner in the corporate capital remains unchanged, although it is now composed of two classes of stock instead of a single class as previously. While there is now a book value identified with the new stock, this is accompanied by a corresponding decrease in the book value identified with original holdings. A similar position can be taken when an investor receives dividends in the form of bonds or other contractual obligations of the corporation.

One difference between the receipt of stock of the same class and securities of a different class needs to be noted. When common stock is received on common, all shares are alike and original cost may be equitably assigned in terms of the total number of units held after the dividend. When different securities are received whose value differs from that of the shares originally held, it would not be proper to assign an equal amount of original cost to both old and new units. Instead, equitable apportionment of cost would suggest use of the relative sales values of the two classes of securities. To illustrate, assume the ownership of 100 shares of X Co. common stock acquired at \$100 per share. A stock dividend of 50 shares of \$25 preferred stock is distributed. At this time the common stock is selling for \$65 and the preferred stock for \$20. The receipt of the dividend and the cost apportionment may be recorded as follows:

Investment in X Co. Preferred Stock.....	1,333.33	
Investment in X Co. Common Stock.....		1,333.33
Received 50 shares of preferred stock as dividend on 100 shares of common. Cost of common apportioned to common and preferred stock on basis of relative sales values:		
Value of Preferred 50 × \$20.....	\$1,000	
Value of Common 100 × \$65.....	6,500	
		<u>\$7,500</u>

Cost assigned to preferred:  $\frac{\$1,000}{\$7,500} \times \$10,000 = \$1,333.33$  (cost per share:  $\frac{\$1,333.33}{\div 50}$ , or  $\$26.67$ )

Cost assigned to common:  $\frac{\$6,500}{\$7,500} \times \$10,000 = \$8,666.67$  (cost per share:  $\frac{\$8,666.67}{\div 100}$ , or  $\$86.67$ )

\$10,000.00

It should be pointed out that while the United States Supreme Court originally supported the general proposition that a stock dividend results in no income to the recipient, it later held that exception to this position is called for when the stock dividend is not of the same class as that on which it is issued. In the latter instance, it held that the stockholder realized income equal to the fair market value of the new stock acquired. Federal tax laws take this position in requiring the taxpayer to report as taxable income the market value of the new security. When the investor follows the tax view in the accounts, the new security is recorded at its market value and Dividend Income is credited. Loss or gain on the sale of the new security is then calculated in terms of the value established on its receipt; loss or gain on the sale of the old security is calculated on the basis of the unadjusted cost of original holdings.

### STOCK SPLIT-UPS

A corporation may effect a *stock split-up* by reducing the par of the stated value of capital stock and increasing the number of shares outstanding accordingly. Capital stock and surplus balances remain unchanged on the corporate books; however, the stockholders' ledger is revised to show the increased number of shares identified with each stockholder. A split-up leaves stockholders' respective interests in the corporation exactly as they were.

To illustrate, assume that a company effects a 3-for-1 split of its shares. Each stockholder acquires 3 shares for every 1 held, but each share now represents only one third of the interest previously represented in view of the increase in total shares outstanding. Furthermore, stock can be expected to sell for only one third of its previous value as a result of the split. No income can be recognized on the division of holdings into a greater number of shares; however, with the increase in shares, each new share now carries one third of the original cost. A memorandum entry is made to report the increase in the number of shares and the corresponding decrease in the cost of each share.

Accounting for stock split-ups, then, follows that described for stock dividends. Tax requirements for a split-up agree with the foregoing.

**STOCK RIGHTS**

When a corporation wishes to expand its operations through the sale of additional stock for cash, it must first afford stockholders the right to subscribe to the new stock. This privilege attaching to stock is called the *pre-emptive right* and is designed to enable a stockholder to retain his respective interest in the corporation. For example, assume that a stockholder owns 50 per cent of the outstanding stock. If the stock is doubled and the additional stock is offered and sold to other parties, his interest in the company would drop to 25 per cent. With the right to subscribe to his prorata share of any new offering, the stockholder can maintain his proportionate interest in the corporation. It should be noted, however, that pre-emptive rights generally apply only to the issue of the same kind of stock held by the stockholders. The statutes of some states allow the corporation to limit stockholders' pre-emptive rights by suitable provisions in the corporate charter.

Because of the possibility of failure to dispose of an entire new offering by sale to existing stockholders, many corporations follow the policy of having the offering underwritten by an investment house. Under this arrangement, the underwriting house agrees to purchase at an agreed price all stock that is not sold to the existing stockholders.

In order to make subscription privileges attractive and to insure sale of the stock, it is customary for corporations to offer the additional issues to its stockholders at less than the market price of the stock. Certificates known as *warrants* are issued to each stockholder. Warrants represent *rights* to subscribe for stock in proportion to the holdings on which they are issued. One right is offered for each share held. But more than one right may be required for the subscription to one share. Rights may be sold by the stockholder if he does not care to exercise them himself.

As in the case of cash and other dividends, the board of directors in declaring rights to subscribe for additional shares designates a record date that follows the declaration date. All persons who are shown on the records of the corporation to be stockholders on the record date are entitled to the rights. Stock is sold "rights-on" up to the record date, since the party who acquires the stock will receive the rights upon their issuance. After the record date, the stock sells "ex-rights," and the rights may be sold separately by those who own the rights as of the record date. A date on which the rights expire if they are not exercised is also designated at the time the rights are declared. Rights are worthless beyond the expiration date.

**ACCOUNTING FOR STOCK RIGHTS**

Federal income tax regulations prescribe certain rules for the determination of the gain or the loss on (1) the sale of rights, (2) the sale of the stock on which the rights are issued, and (3) the sale of stock acquired by exercise of the rights. These rules are acceptable from an accounting point of view and are normally applied in the accounts. They are illustrated in the example that follows.

Assume that in 1950 W. C. Warner acquires 100 shares of Superior Products Common, par \$100, at \$180 per share. In 1952 the corporation issues rights to purchase 1 share of common at par for every 5 shares owned. Warner thus receives 100 rights— one right for each share owned. However, since 5 rights are required for the acquisition of a single share, the 100 rights enable Warner to subscribe for only 20 new shares. Warner's original investment of \$18,000 may now be considered to apply to two classes of assets, the shares themselves and the rights now separately held. Since either class of security may be sold separately, an allocation of the original cost of the stock to the stock and to the rights may be made. This allocation is made on the basis of the relative market values of each security as of the date that the rights are issued. The cost allocation may be expressed as follows:

$$\text{Cost Assigned to Rights: } \frac{\text{Market Value of Rights}}{\text{Market Value of Stock Ex-Rights} + \text{Market Value of Rights}} \times \text{Original Cost of Stock}$$

$$\text{Cost Assigned to Stock: } \frac{\text{Market Value of Stock Ex-Rights}}{\text{Market Value of Stock Ex-Rights} + \text{Market Value of Rights}} \times \text{Original Cost of Stock}$$

Assume that Superior Products Common is selling ex-rights at \$121 per share and rights are selling at \$4 each. The cost allocation is made as follows:

$$\text{Cost Assigned to Rights: } \frac{4}{121 + 4} \times \$18,000 = \$ 576 \quad (\$576 \div 100 = \$5.76, \text{ cost per right})$$

$$\text{Cost Assigned to Stock (balance): } \frac{121}{121 + 4} \times \$18,000 = \$17,424 \quad (\$17,424 \div 100 = \$174.24, \text{ cost per share})$$

$$\text{Total cost assigned} \quad . . . \quad \underline{\underline{\$18,000}}$$

The following entry may be made at this time:

Superior Products Stock Rights	576	
Investment in Superior Products Common		576
Received 100 rights permitting the purchase of 20 shares at par. Cost of stock was apportioned on the basis of the relative market values of stock and rights on the date of issue of the rights.		

A corporation issuing rights generally notifies individual stockholders of the portion of cost to be applied to rights. While stockholders' cost assignments to rights will vary as a result of the different amounts paid for the stock originally acquired, the cost apportionment formula is the same in each case. Instead of notifying stockholders of an assignment of  $\frac{4}{125}$  of the original cost to rights, as above, the corporate notice would normally instruct stockholders to calculate rights cost at 3.2% of their respective investment cost ( $4 \div 125$ ).

The cost apportioned to the rights is used in determining the gain or the loss arising from the sale of rights. Assume that the rights in the preceding example are sold at  $4\frac{1}{2}$ . The following entry would be made:

Cash	450	
Loss on Sale of Superior Products Stock Rights	126	
Superior Products Stock Rights		576
Sold 100 rights at $4\frac{1}{2}$ .		

If the rights are exercised, the cost of the new shares acquired consists of the cost assigned to such rights plus the cash that is paid in the exercise of the rights. Assume that, instead of selling the rights, Warner exercises his privilege to purchase 20 additional shares at par. The following entry is made:

Investment in Superior Products Common	2,576	
Superior Products Stock Rights		576
Cash		2,000
Exercised rights acquiring 20 shares at par, \$100.		

Assuming the exercise of rights, Warner's records show an investment balance of \$20,000 consisting of two lots of stock as follows:

Lot 1 (1950 acquisition)	100 shares ( $\$17,424 \div 100 = \$174.24$ , cost per share as adjusted)	\$17,424
Lot 2 (1952 acquisition)	20 shares ( $\$2,576 \div 20 = \$128.80$ , cost per share acquired through rights)	2,576
		\$20,000

These costs provide the basis for calculating gains or losses from subsequent sales of the stock.

When rights are received as a result of the ownership of stock that was acquired through several purchases at different costs, special care is required in tracing costs. Rights must be related to the different stock lots owned. Costs of each stock lot would then be allocated between the stock and the rights emerging from the ownership of the particular lot. These costs are used in the future sale or exercise of the various stock-right lots. If all of the rights are exercised, newly acquired stock would be considered to consist of a number of lots at different costs depending upon the cost of the rights exercised in their respective acquisitions.

Frequently a warrant includes one or more rights that cannot be used in the purchase of a whole share. For example, assume that the owner of 100 shares receives 100 rights that permit him to subscribe to 1 share for every 6 rights held. Here the holder uses 96 rights in subscribing to 16 shares. He may (1) waive the right to exercise the 4 remaining rights, (2) sell the 4 rights, reporting a gain or a loss on such sale, or (3) supplement the 4 rights by the purchase of 2 more rights, thus making possible the purchase of an additional share of stock.

If the owner of valuable rights allows them to lapse, it would appear that the cost assigned to such rights should be written off as a loss. Support for such action is based on the theory that the issuance of stock by the corporation at less than current market price results in some dilution in the equities identified with original holdings. However, when changes in the market price of the stock make the exercise of rights unattractive and the rights cannot be sold, any cost of rights reported separately should be returned to the investment account. It may be noted that for income tax purposes a loss cannot be claimed when rights are allowed to lapse. For tax purposes, then, stock investment cost remains unchanged when rights are not exercised or sold.

One frequently finds in practice that no entry is made upon acquisition of rights; but appropriate reduction in the cost attaching to the original investment is made at the time of the sale or the exercise of rights. While the transfer of cost through a stock rights account is not shown, investment balances would be the same after the sale or the exercise of rights.

#### **THEORETICAL VALUE OF STOCK RIGHTS**

Reference is frequently made to the *theoretical value* of stock rights. The theoretical value of rights is the value at which it is expected rights will sell on the market. The theoretical value may be calculated (1) when stock is still selling rights-on or (2) after the date rights have accrued to owners and stock sells ex-rights.

*Calculation of Theoretical Value of Rights When Stock Sells Rights-On.* The value at which it is expected that rights will sell may be calculated by the following formula:

$$\frac{\text{Value of Stock Rights-On Minus Subscription Price}}{\text{Number of Rights Required to Purchase 1 Share Plus 1}} = \text{Value of 1 Right}^1$$

Assume that in the preceding example the common stock of Superior Products sells rights-on at \$125 and that after the rights are sold separately a share can be bought for \$100 plus 5 rights. By the use of the foregoing formula, the theoretical value of the rights may be found as follows:

$$\frac{\$125 - \$100}{5 + 1} = \$4\frac{1}{6}, \text{ theoretical value of 1 right}$$

The theoretical value of the stock, or the value at which the stock is expected to sell ex-rights, is \$125 - 4 $\frac{1}{6}$ , or \$120 $\frac{5}{6}$ . The foregoing values would result in similar costs for the purchase of rights and the payment of the exercise price (\$100 + [5 × \$4 $\frac{1}{6}$ ]) as compared with the purchase of shares outright (\$120 $\frac{5}{6}$ ). However, market forces will fail to provide such close cost correspondence when the stock and the rights are first quoted separately. In the example on page 343 it was assumed that the stock opened at \$121 ex-rights, while rights sold for \$4.

*Calculation of Theoretical Value of Rights After Stock Sells Ex-Rights.* When stock sells ex-rights, the difference between the market value of the stock and the amount at which the stock can be acquired from the company through exercise of rights is the value attached to the number of rights required for such exercise. The theoretical value of the rights when the stock sells ex-rights may be expressed in formula form as follows:

$$\frac{\text{Value of Stock Ex-Rights Minus Subscription Price}}{\text{Number of Rights Required to Purchase 1 Share}} = \frac{\text{Theoretical Value of Stock Rights}}{\text{Stock Rights}}$$

<sup>1</sup>The derivation of this formula may be observed from the following: Assume that the common stock of Superior Products sells rights-on at \$125, but that it later can be purchased at \$100 plus 5 rights.

Before rights sell separately:

$$1 \text{ share} + 1 \text{ right} = \$125$$

After rights sell separately:

$$1 \text{ share} = \$100 + 5 \text{ rights}$$

The first equation is

$$1 \text{ share} + 1 \text{ right} = \$125$$

After transposition, the second equation is

$$1 \text{ share} - 5 \text{ rights} = \$100$$

By subtracting the second equation from the first

$$6 \text{ rights} = \$25$$

Then

$$1 \text{ right} = \$4\frac{1}{6}$$

Assuming that the stock previously mentioned drops from \$121 to \$115, one would expect the rights to move correspondingly from \$4 to a theoretical value as follows:

$$\frac{\$115 - \$100}{\frac{1}{2}} = \$3$$

### LIQUIDATING DIVIDENDS

When stock is held in a company whose chief asset is a natural resource that is being consumed by the operations of the company, the dividends received may be in part a distribution of amounts received from the sale of such assets, or in effect a liquidating dividend, and the balance a distribution of profits resulting from operations. When this is the case, the investment account is credited with the amount representing the liquidating dividend and an income account is credited with the amount representing earnings. For example, assume that dividends of \$1,200 are received from the Ames Corporation, 40 per cent representing a liquidating dividend. An entry is made as follows:

Cash	1,200	
Investment in Ames Corporation Stock		480
Dividend Income		720

Information regarding the percentage of dividends applicable to liquidation and the percentage representing profits is reported to the stockholder by the corporation making the payment. This report may not accompany each dividend check received during the fiscal year but instead may cover the total of dividend checks paid during the period of a year. If dividends have been recorded on the books as income during the year, the income account is debited and the investment account is credited when notification is received concerning the amount that is to be recognized as return of invested capital.

When a company is in partial or complete liquidation, amounts received should likewise be identified as distributions of past earnings or distributions of invested capital. That portion representing income is recorded as a credit to Dividend Income, while that portion representing a return of invested capital is credited to the investment account.

When liquidating dividends exceed investment cost, excess distributions are reported in a revenue account as gain from the investment. If liquidation is completed and the investment cost is not fully recovered, the balance of the investment account should be written off as a loss.

**STOCK REDEMPTION**      Stock, particularly preferred issues, may be called in for redemption and cancellation by the corporation under conditions set by the issue. The call price is ordinarily set at a figure higher than the price at which the stock was originally issued, but this call price may be more or less than the cost to the holder who acquired the stock from another person after its original issue. When stock is surrendered to the corporation, an entry is made recording the cash received on redemption. The difference between the cash proceeds and the investment cost is recorded as a gain or a loss. For example, assume that an investor acquires 100 shares of Z Co. 6 per cent preferred stock, par \$100, at 97. These shares are later called in at 105. The redemption is recorded on the books of the stockholder as follows:

Cash	10,500	
Investment in Z Co. 6% Preferred		9,700
Gain on Redemption of Z Co. Preferred		800
Received \$10,500 on call of Z Co. preferred stock, cost \$9,700.		

**STOCK CONVERSION**      When stock is converted into another security in accordance with terms of the issue, the investor opens accounts with the newly acquired security and closes the accounts with the security originally held. In the absence of a market value for securities exchanged, the cost of the stock exchanged may be considered to apply to the new acquisition. If, however, either class of securities has a market value, a gain or loss is recognized on the exchange. This gain or loss is determined by the difference between the market value and the cost of the stock given up. To illustrate, assume (1) that an investor acquires 100 shares of Y Co. convertible preferred stock at \$100; (2) that this preferred is convertible into two shares of Y Co. common at the holder's option; and (3) that the preferred stockholder elects to exercise the conversion privilege at a time when the common is selling for \$65. The conversion is recorded on the books of the stockholder by the following entry:

Y Co. Common Stock	13,000	
Y Co. Preferred Stock		10,000
Gain on Conversion of Y Co. Preferred		3,000
Acquired 200 shares of common stock valued at \$65 in exchange for 100 shares of preferred stock costing \$100.		

Recognition of a gain or a loss on security exchange can be supported on the grounds that the exchange closes the transaction cycle relating to the original asset and opens a new cycle, the newly acquired

asset requiring valuation in terms of current market. However, there are some who object to the recognition of gain or loss on stock conversion. *These hold that there is no actual realization of gain or loss as there would be upon the outright sale of stock; here an asset has been replaced by a similar asset, such exchange simply calling for a transfer of cost from the asset originally held to the newly acquired asset.* It may be mentioned that income tax laws take this position only on the exchange of common for common or preferred for preferred of the same corporation. No gain or loss is recognized on such transfers, the cost of the original asset becoming the basis for the new asset. However, an exchange of one class of securities for another class, such as preferred for common or stock for bonds, calls for recognition of the new asset at its current value and the recognition of a gain or a loss unless the exchange originates pursuant to a plan of corporate reorganization.

#### **OWNERSHIP OF CONTROLLING INTEREST IN STOCK**

The acquisition of a majority interest in the stock of another company raises the question of whether such a relationship calls for special accounting in view of the control that is exercised and the effects that favorable and unfavorable operations have upon the welfare of the parent. There are two positions that are taken with respect to carrying investments in subsidiaries: (1) investments may be carried on a cost or a modified cost basis, comparable to investments in companies not so controlled, and (2) investments may be carried in a manner that reflects the degree of success or failure of the controlled unit. The first method emphasizes the legal factors of the relationship by recognizing only investment cost and is referred to as the *cost method*; the second method emphasizes the economic factors involved in the relationship by recognizing changes in the parent's equity in the subsidiary and is referred to as the *equity method*.

*Cost Method.* When the cost method is used, the investment account reports the original cost of the investment in the subsidiary. Increases and decreases in the capital of the subsidiary resulting from profit and loss are disregarded on the books of the parent. Dividends representing distributions of subsidiary earnings are recorded by credits to Dividend Income. Profits of a subsidiary, then, are recognized only as these are translated into dividends and become available to the parent.

The foregoing practices are normally subject to two important modifications representing departures from a strictly legal approach:

(1) Dividends that represent distributions of subsidiary earnings accumulated prior to the date on which the parent company acquired

control are recorded by the parent not as dividend income but as reductions in the investment balance. Such dividends represent, in effect, a partial return of investment or the equivalent of a liquidating dividend since the asset transfer is accompanied by the shrinkage of subsidiary net asset and capital balances below acquisition amounts. The source of dividends, whether out of earnings accumulated prior to stock acquisition or after stock acquisition, could be ignored when holdings were small, all dividend receipts being recognized as income; but when holdings in stock are significant, it becomes important that dividends that impair the values in support of the investment balance be recognized as such.

(2) Subsidiary losses that reduce subsidiary proprietorship substantially below acquisition amounts may be reflected in the parent's books as reductions in its investment balance and surplus. Such write-downs may be considered appropriate when unsuccessful operations of the subsidiary have seriously and presumably permanently impaired the value of the investment.

*Equity Method.* The equity method brings on the books of the parent a recognition of the changes in its equity in the subsidiary as a result of subsidiary profit and loss. The subsidiary is viewed as though it were a branch. When the subsidiary announces a profit, the parent debits the investment account and credits a surplus account; when a loss is announced, the investment account is credited and the surplus account is debited.

Since profits of a subsidiary from a legal point of view are not realized profits until they are made available to the parent in the form of dividends, the surplus credit should be made originally to a revaluation surplus account. Losses would be recorded as decreases in such a balance. When dividends are received, two entries are called for: (1) the receipt of cash is recorded by a debit to Cash and a credit to the investment account, the increase in the subsidiary equity previously recognized now becoming available in the form of cash, and (2) revaluation surplus equal to the amount of the dividend may now be recognized as Dividend Income, subsidiary earnings previously recognized as revaluation surplus now having become available to the parent. Dividend Income is closed into Profit and Loss at the end of the period and is ultimately reflected as an increase in Earned Surplus. The equity method thus consists of the periodic recognition of subsidiary success or failure by the application of appraisal accounting: an increase in subsidiary net assets is followed on the books of the parent by a revaluation of the investment balance upward and an in-

crease in revaluation surplus; a decrease in subsidiary net assets is followed on the books of the parent by a revaluation of the investment account downward and a decrease in revaluation surplus.

The cost method and the equity method of accounting for a controlling interest in the stock of a subsidiary are illustrated in the following example:

Transaction	Cost Method of Carrying Investment	Equity Method of Carrying Investment
Jan. 1, 1953 Investment in 80,000 shares of Co. S stock at \$50, Co. S having 100,000 shares outstanding.	Investment in Co. S Stock. 400,000 Cash 400,000	Investment in Co. S Stock 400,000 Cash 400,000
June 30, 1953 Announcement by Co. S of net income of \$30,000 for six-month period. (Parent's share of profits, 80% of \$30,000.)	No entry	Investment in Co. S Stock 24,000 Revaluation Surplus From Recognition of Undistributed Profits of Co. S. 24,000
Dec. 10, 1953 Payment of dividend by Co. S, \$10,000. (Parent's share of dividend, 80% of \$10,000.)	Cash 8,000 Dividend Income. 8,000	Cash 8,000 Investment in Co. S Stock 8,000 Revaluation Surplus — From Recognition of Undistributed Profits of Co. S 8,000 Dividend Income 8,000
Dec. 31, 1953 Announcement by Co. S of net loss of \$5,000 for six-month period. (Parent's share of loss, 80% of \$5,000.)	No entry	Revaluation Surplus — From Recognition of Undistributed Profits of Co. S 4,000 Investment in Co. S Stock 4,000

The effect of subsidiary operations upon parent company profit and loss in each case above is the same. In each instance the parent recognizes income and an earned surplus increase of \$8,000. However, when the cost method is used, the investment account remains unchanged at \$400,000. When the equity method is used, the investment balance is \$412,000, reflecting the net increase that has taken place in the parent's equity in the subsidiary as a result of the recognition of undistributed earnings of the subsidiary since date of acquisi-

tion, 80% of \$15,000, or \$12,000. The \$12,000 increase in the investment balance is matched by a similar balance in the revaluation surplus account Undistributed Profits of Co. S.

If both the legal and the economic aspects of the relationship are to be disclosed on the statements of the parent company, cost method accounting should be accompanied by data provided in parenthetical or other appropriate form concerning net changes in the parent's equity in subsidiary earnings since control of the subsidiary was achieved; equity method accounting should be accompanied by data concerning original investment cost. Investment data might be shown on the balance sheet as follows:

(Cost Method)

Investment in Subsidiary Co. S

(Investment is carried at original cost of 80,000 shares representing an 80% interest. The company's equity in undistributed profits of Co. S since date of acquisition, Jan. 1, 1953, not included in the accounts, is 80% of \$15,000, or \$12,000.)

400,000

(Equity Method)

Investment in Subsidiary Co. S

(Investment is carried at cost of 80,000 shares representing an 80% interest, \$400,000, increased by the company's equity in undistributed profits of Co. S since date of acquisition, Jan. 1, 1953, 80% of \$15,000, or \$12,000.)

412,000

The use of the equity method calling for an investment balance that follows changes in subsidiary capital brings an economic interpretation of the relationship between parent and subsidiary into the separate accounts of the parent. However, the full economic implications to the parent of subsidiary ownership and operations can be presented only through the preparation of consolidated statements. Assets and liabilities of the subsidiary replace the investment account and are combined with assets and liabilities of the parent and increases or decreases in subsidiary capital are combined with surplus of the parent in developing a consolidated balance sheet; income and expense balances of the subsidiary are combined with similar balances of the parent in developing a consolidated income statement. Statements are prepared as though parent and subsidiary units were a single entity. Financial position and progress are reported for affiliated units from an over-all economic point of view, and the legal realities underlying the relationships are disregarded.

Frequently, only consolidated statements are made available by parent companies to their stockholders; but in a number of cases both individual and consolidated statements are made available. The detailed problems involved in the development of such statements are beyond the scope of this chapter.

**INVESTMENTS AND  
TAX ACCOUNTING**

Previous discussions have suggested that federal income tax laws may call for the use of a certain method when a number of methods, including the one prescribed, may be considered theoretically sound from an accounting point of view. In other instances tax laws call for the use of certain arbitrary methods that differ from those that might warrant application on theoretical grounds. Normally, the procedures that are to be used in the calculation of taxable income are actually applied by the taxpayer in the accounts so that analysis of income and its restatement for tax purposes may be avoided. Such practice may be supportable when the tax methods are acceptable ones, or when their applications offer measurements that do not differ materially from those that might be obtained through the use of alternative methods considered more acceptable under the circumstances. But the use in the books of tax methods that are considered to result in significant misstatements in costs and in revenue cannot be supported. In the event of conflict between acceptable accounting procedures and tax procedures, accounting reports should be developed in terms of the former, while supplementary records may be maintained to report the financial data required for tax reporting. Accounting statements, then, properly summarize financial activities, while tax returns can be satisfactorily prepared and supported through the use of book figures and supplementary tax records.

**QUESTIONS**

1. Distinguish between temporary investments and long-term investments.
2. State how each of the following would be classified on the balance sheet:
  - (a) Stock held for purposes of control.
  - (b) Stock rights to be sold.
  - (c) Stock held for conversion into bonds within six months.
  - (d) Stock that is intended to be transferred to a supplier in cancellation of an amount owed.
3. How would you record an investment in stock when it is acquired:
  - (a) by exchange for assets whose value is known; (b) by exchange for assets whose value is not known, stock for patents, for example?
4. The Parker Co. accepts 2,000 shares of Murdock Common stock in full payment of a claim of \$12,000 against the latter company. State how this transaction would be recorded on the books of the Parker Co., as-

suming that (a) Murdock stock is closely held and no market value is available; (b) Murdock stock is quoted on the market at \$5; (c) Murdock stock is quoted on the market at \$6.50 bid, \$7.50 asked.

5. Explain how you would record the purchase of stock and bond units acquired for one lump sum when (a) only one of the securities is quoted on the market, (b) both securities are quoted, (c) neither security is quoted.

6. R. S. Doug purchases 1,000 shares of Abbott Motors at \$90 a share, paying his broker \$40,000. At the end of the year he shows on his balance sheet Abbott Motors Stock, \$75,000. The market value of the stock is now \$125 a share and Doug has made no further payment to his broker. Do you approve of this report? Explain.

7. A. T. Bell purchased 100 shares of Ann Arbor Electric 5% Preferred at 80, 100 shares at 100, and 100 shares at 120. Later he sold 200 shares at 135. (a) Assuming that Bell wishes to report as little gain for tax purposes as possible this year, what procedure would you advise? (b) How will this procedure affect the disposition of remaining stock?

8. Jackson Parks insists that accounting consistency would require that the valuation procedure applied to permanent investments should be the same as that applied to short-term investments. Do you agree? Give reasons in support of your position.

9. (a) Distinguish between a warrant and a stock right. (b) Distinguish between stock sold rights-on and stock sold ex-rights.

10. Give the equation for calculating the theoretical value of a stock right (a) before rights are issued, (b) after rights are issued.

11. Warren Phillips receives stock rights on an investment and a notice from the corporation indicating that 2.6135% of the cost of his investment is to be applied to the rights. Explain how the corporation arrived at this percentage and the use that Phillips is to make of this information.

12. B. A. Beard receives a \$4.00 dividend from Atlas Securities Co. accompanied by a statement that \$1.56 represents a distribution of income and \$2.44 represents a dividend in partial liquidation. (a) What is the meaning of this statement? (b) What entry would Beard make in recording the dividend?

13. How should each of the following situations be treated on the books and on the income tax return:

- (a) Announcement of dividends on investments and arrival of "record" date.
- (b) Sale of part of security holdings acquired in three lots.
- (c) Receipt of stock dividend of common on common.
- (d) Receipt of stock dividend of preferred stock on common.
- (e) Exchange of 1 share of common for 3 in stock split-up.
- (f) Receipt of stock rights and their sale.
- (g) Surrender of preferred stock at a redemption price that is less than cost.
- (h) Receipt of dividends from a subsidiary company 90% owned.

14. (a) Define: (1) parent company, (2) subsidiary company. (b) How much stock ownership is required to exercise control?

15. (a) Explain the two methods that may be employed in carrying investments in subsidiary companies and indicate how they differ from each other. (b) What arguments can you give pro and con for each method?

16. The Matthews Co., 90% owned by the Fellows Corp., has incurred material losses for a five-year period. (a) How would these losses be recognized if the equity method is employed in carrying the investment? (b) Would you recommend any recognition of the losses if the cost method is employed? If so, what form would such recognition take?

### EXERCISES

1. R. T. Welding acquired 100 shares of Walsh Co. stock at 15. At a later date he received a stock dividend of 25 shares, which he sold at 12. Proceeds from the sale were recorded as income. What correction in the accounts would you make assuming: (a) the transaction took place currently and accounts are still open: (b) the transaction was recorded in the previous period and accounts are closed?

2. The Billings Co. holds stock of Willsie acquired as follows:

1950	100 shares	\$6,200
1951	100 shares	4,750
1952	50 shares	2,200

Give the entries that would be made upon the sale of 150 shares in 1953 at \$56 per share assuming that cost is determined by (a) the first-in, first-out method, (b) the weighted average cost, (c) identification of lots sold as 1951 and 1952 purchases.

3. A. C. Wilson purchased 1,000 shares of Michigan Motors on April 6 at 65½. The brokerage cost was \$240. On March 15 Michigan Motors declared a \$1.50 cash dividend payable on May 1 to stockholders of record on April 15. Give the journal entry for (a) the purchase of the stock on April 6 and (b) the receipt of the cash dividend on May 1.

4. M. A. Parks holds stock of A-B Trading Co. acquired as follows:

Jan. 2, 1951	100 shares at \$40	\$4,000
Mar. 30, 1952	100 shares at \$46	4,600

In 1953 Parks receives a 50% stock dividend. He then sells 150 shares at 34½. What entry would be made to record the sale?

5. Bill Beck owns 100 shares of common acquired at \$60 per share. What is the cost basis per share for his investment holdings assuming that:

- (a) He receives a common stock dividend of 1 for 4.
- (b) Common stock is exchanged in a 5-for-1 split.

- (c) He receives a preferred stock dividend of 1 share for every 2 held; common is selling ex-dividend at \$50; preferred is selling at \$50.

6. On July 10 the Atlantic Co. declares stock rights to be made available to stockholders of record July 25, the rights to expire on August 15. The rights permit the purchase of 1 share of stock at \$80 for every 4 shares held. The stock is sold on July 24 rights-on at \$120. (a) What would you suggest is the theoretical value of each right when these are sold separately on July 25? (b) What is the significance of each of the dates indicated?

7. The Davis Co. issues rights to subscribe to its stock, the ownership of 5 shares entitling the stockholder to subscribe for 1 share at par, \$10. (a) Assuming that stock is quoted rights-on at \$12.50, what is the theoretical value of a right? (b) Assuming that stock is quoted ex-rights at \$12.50, what is the theoretical value of a right?

8. The Drucker Manufacturing Co. wishes to finance an expansion program through the issue of new stock. Accordingly it offers its stockholders the opportunity to subscribe to new stock at \$135 per share up to 50% of their holdings. The value of the stock on July 1 is \$150 per share. Stock goes ex-rights on the market on July 2. A. L. Wesley owns 100 shares of Drucker Manufacturing Co. stock acquired at a cost of \$6,000. (a) What is the theoretical value of Wesley's rights when these are received? (b) Assuming that the theoretical value is used as a basis for cost apportionment, what entry would be made if Wesley sells his rights for \$400? (c) What entry would be made if Wesley exercises his rights?

9. On April 1, N. N. Andrews purchased 1,000 shares of Doyle Parts common stock, par \$5, at 24. On July 7 Andrews received a stock dividend of 1 share for every 5 owned. On September 10 he received a cash dividend of 60 cents on the stock and was granted the right to purchase 1 share at \$10 for every 4 shares held. On this date stock had a market value ex-rights of \$15, and each right had a value of \$1. On December 12 Andrews sold 400 rights at  $1\frac{1}{2}$  and exercised the remaining rights. What entries will appear on Andrews' books as a result of the foregoing?

10. Journalize the following transactions for S. R. Shore for 1953:

- (a) On June 15 purchased 300 shares of O'Connor Company common stock, par \$10, at 60.
- (b) On July 10 received a  $33\frac{1}{3}\%$  stock dividend.
- (c) On September 10 received a \$1 cash dividend on stock and was granted the right to purchase 1 share at \$50 for every 4 shares held. Stock had a market value ex-rights of \$58 and each right had a value of \$2.
- (d) On September 20 acquired 40 shares of stock by exercise of rights and sold remaining rights at  $1\frac{1}{2}$ .

11. A. M. Peet owns 100 shares in Fabulous Prospectors, Inc., acquired in 1945 at a cost of \$5 per share. Beginning in 1949, Peet received dividends of \$2 per share each year, the corporation notifying him that a portion of this amount represented earnings and the balance a liquidating dividend, the allocation to be made as follows:

	Income	Depletion Proceeds— Liquidating
1949. . . .	\$ 728	\$1 272
1950 . . . .	68	1 32
1951 . . . .	642	1 358
1952 . . . .	44	1 56
1953 . . . .	61	1 39

(a) What entries should Peet have made each year in recording the dividends? (b) How would you report the investment on Peet's balance sheet at the end of 1953?

12. The Wharton Co. acquires 425,000 shares of Bagby, Inc. in 1952 at a total cost of \$1,600,000. Bagby, Inc. has 500,000 shares outstanding. What entries would be made by the Wharton Co. in 1953 for the following data, assuming the investment account is carried on (a) the cost basis, (b) the equity basis:

- (1) Bagby, Inc. announces a profit of \$80,000 for the first six months and pays a cash dividend of 10 cents.
- (2) Bagby, Inc. announces a loss of \$15,000 for the second six months and distributes a 5% stock dividend.
- (3) The Wharton Co. acquires an additional 26,250 shares of Bagby, Inc. stock at 4.

## PROBLEMS

12-1. J. R. Miller holds shares of Wooster Co. acquired as follows:

1949	200 shares	\$7,200
1951	100 shares . . . .	4,500

In 1953 the following takes place with respect to these holdings:

- April 5. Received a 25% stock dividend.
- July 1. Received a \$1 dividend, and also rights to subscribe for additional shares as follows: 1 share could be purchased at par, \$50, for every 5 shares held. On the date of rights issue, stock was selling ex-rights for  $62\frac{1}{2}$ ; rights were selling for  $2\frac{1}{2}$ .
- July 15. Miller purchased 25 shares exercising rights identified with the 1949 stock purchase and sold remaining rights at  $2\frac{1}{4}$ .
- Dec. 10. Miller sold 100 shares acquired in 1949 at  $42\frac{3}{4}$ .

*Instructions:* (1) Give journal entries to record the foregoing transactions. (Give computations in support of your entries.)

(2) Give the investment account balance on December 31 and the shares and costs making up this balance.

**12-2.** R. R. McCall owns 300 shares of Jaspar Parts, Inc. on January 1, 1953, acquired on May 1, 1950, for \$18,000.

During 1953 the following takes place with respect to this investment:

- March 1. Received cash dividend of fifty cents and stock dividend of 10%.
15. Received stock rights offering the purchase of 1 share at 80 for every 3 shares held. At this time stock was quoted ex-rights at 95 and rights were quoted at 5. Rights were exercised.
- Sept. 1. Received a cash dividend of 50 cents and a stock dividend of 10%.
- Dec. 5. Received stock rights offering the purchase of 1 share at 80 for every 3 shares held. At this time stock was quoted ex-rights at 86 and rights were quoted at 2. Rights were sold at this price.

*Instructions:* (1) Give journal entries to record the foregoing transactions.

(2) Give the investment account balance as of December 31, 1953, including shares and costs in support of this balance.

**12-3.** The McArthur Co. has the following securities on hand on January 1, 1953:

Investment in Jerome Co. 5% Preferred, par \$50, 100 shares	\$ 4,600
Investment in Wylie Wheels Common, 400 shares	20,000

During 1953 the following transactions were completed relative to investments:

- Jan. 15. Purchased 150 shares of Stone and Stocker Co. Common at 72½.
- March 1. Received a cash dividend of 50 cents and stock dividend of 5% on Wylie Wheels Common.
- April 12. Purchased 250 shares of Stone and Stocker Co. Common at 74.
- May 10. Received the semiannual dividend on Jerome Co. 5% Preferred.
- July 1. Stone and Stocker Co. Common was split on a 2-for-1 basis.
- Sept. 1. Received a dividend of \$1 on Stone and Stocker Co. Common.
1. Received a cash dividend of 50 cents and a stock dividend of 5% on Wylie Wheels Common.
- Oct. 10. Sold 200 shares of Stone and Stocker Co. Common at 41½, and also Jerome Co. 5% Preferred at 52.
- Nov. 28. Received rights on Stone and Stocker Co. Common to subscribe for additional shares as follows: 1 share could be acquired at \$35 for every 8 shares held. On this date stock was selling for 39½ and rights were selling at ½.
- Dec. 1. Sold all of the Stone and Stocker Co. rights at ¾.
20. Received a special year-end dividend on Wylie Wheels Common of \$1 50.

*Instructions:* (1) Assuming the use of first-in, first-out in assigning costs to sales, give journal entries to record the foregoing transactions. (Give calculations in support of your entries.)

(2) Give the investment account balances as of December 31, 1953, including the number of shares and costs making up such balances.

**12-4.** You have instructed the bookkeeper for Sloan Products, Inc., to record all proceeds from security transactions directly in the investment accounts so that all of this data will be summarized there and will be

available for analysis and proper disposition at the time of your audit. You find the following data in the account summarizing the investment with Forbes Motors Common:

Forbes Motors Common

1/12/52 Purchased 100 shares at 40 . . . . . 4,000	2/15/53 Cash dividend . . . . . 200
7/15/52 Purchased 100 shares at 44 . . . . . 4,400	3/25/53 Proceeds from sale of 50 rights at 3 . . . . . 150
3/20/53 Payment on purchase of 50 shares through exercise of 150 rights 2,500	12/20/53 Proceeds from sale of 100 shares at 60 . . . . . 6,000

Further analysis discloses that rights were received in March permitting the purchase of 1 share of stock at \$50 for every 3 shares held. In May the company was informed that 5.125% of original stock cost was applicable to the rights.

*Instructions:* (1) Assuming the use of first-in, first-out in calculating cost on sales, give individual entries for each correction required in the investment account on December 31, 1953.

(2) Give the corrected balance for the investment account on December 31 and the shares and costs making up this balance.

12-5. The Bentley and Carter Corporations each have 10,000 shares of no-par stock outstanding. Anderson, Inc. owns 8,000 shares of Bentley stock and 9,000 shares of Carter stock. Changes in surplus for Bentley and Carter for 1952 and 1953 are as follows:

	Bentley Corporation	Carter Corporation
Surplus or Deficit* balance, January 1, 1952 . . . . .	\$40,000	\$15,000*
Dividends paid in 1952 . . . . .	15,000	
	\$25,000	\$15,000*
Profit or Loss* for 1952 . . . . .	10,000*	40,000
	\$15,000	\$25,000
Dividends paid in 1953 . . . . .		5,000
	\$15,000	\$20,000
Profit or Loss* for 1953 . . . . .	10,000	5,000*
	\$25,000	\$15,000

*Instructions:* (1) Give any entries required on the books of Anderson, Inc. for 1952 and 1953, assuming that investments in subsidiaries are carried at cost.

(2) Give any entries required on the books of the parent for 1952 and 1953, assuming that investments in subsidiaries are carried on the equity basis.

**12-6.** *David Conley had the following transactions in the stock of the Leigh Corporation:*

- (a) January 7, 1946, purchased 200 shares of \$100 par value common stock at \$110 per share.
- (b) The corporation was expanding and, as of March 1, 1947, issued to Mr. Conley 200 rights, each permitting him to purchase  $\frac{1}{4}$  share of common stock at par. The bid price of the stock on March 1, 1947, was \$140. There was no quoted price for the rights.
- (c) Mr. Conley was advised that he would "lose out on his other stock if he did not pay in the money for the rights." He therefore paid for the new shares on April 1, 1947, charging the payment to his investment account. Since he felt that he had been assessed by the company, he credited the dividends (10% in December of each year) to the investment account until the debit was fully offset.
- (d) In December, 1951, Mr. Conley received a 50% stock dividend from the company. He made no entry for this dividend because he expected to sell the shares received. He did sell them in January, 1952, for \$160 per share. He credited income with the proceeds.
- (e) In December, 1952, the stock was split on a 2-for-1 basis and the new shares were issued as no-par shares. Mr. Conley found that each new share was worth \$5 more than the \$110 per share that he paid for his original stock, so he debited the investment account with the additional shares received at \$110 per share and credited income.
- (f) In June, 1953, Mr. Conley sold one half of his stock at \$92 per share. He credited the proceeds to the investment account.

*Instructions:* (1) Set up the investment account as it was kept by Mr. Conley.

(2) Prepare a schedule showing an analysis of the account as the transactions should have been recorded, using the average cost method for recording stock sold.

(3) Prepare the entries that would be necessary to correct the income of each of the years in which Mr. Conley held the stock. (A.I.A. adapted.)

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*Investments**Bonds***INVESTMENTS  
IN BONDS**

Bonds and related securities such as long-term notes and mortgages represent means of raising funds by trading, manufacturing, transportation, real estate, and utility enterprises as well as by the various governmental units - federal, state, and local. Investments in such securities are made by the individual investor. Business units may acquire securities of this class both for short-term and long-term investment purposes. Large blocks of such securities are frequently held by insurance companies, banks, trust companies, various investment organizations, and educational and charitable institutions. This class of securities provides for the payment of principal sums in cash at maturity dates and for periodic interest payments during the investment life. The probability of fluctuation in price during the time these securities are held is generally less than that in the case of stocks. The receipt of income is also more regular and assured than with other classes of investments.

**KINDS OF BONDS**

Bonds issued by private corporations are classified as *secured* or *unsecured*. When bonds are secured, security in the form of a mortgage covering the company's real estate and perhaps other property, or a pledge in the form of certain collateral, is provided. A *first-mortgage bond* represents a first claim against the property of a corporation in the event of the company's inability to meet bond interest and principal payments. A *second-mortgage bond* is a weaker claim since it ranks as a claim on the property only after the claim of the first-mortgage bonds or senior issue has been completely satisfied. A *third-mortgage bond* ranks after satisfaction of second-mortgage bondholders, and so on. A *collateral trust bond* is usually secured by stocks and bonds owned by the debtor corporation. Such securities are generally transferred to a trust company. Here they are held as collateral on behalf of the bondholders and may be sold, if necessary, to satisfy the claims represented by the collateral trust bonds.

When no security is offered the bondholder, the bonds are generally termed *debenture bonds*. Holders of debenture bonds have no claim on

any particular asset, but simply rank as general creditors with other unsecured parties. The risk involved in such securities varies with the strength of the issuing corporation. Debentures issued by a strong company may involve little risk; debentures issued by a weak company whose properties are already fully mortgaged may involve considerable risk.

When a second party promises to make payment on bonds in the event of failure by the issuing company to do so, bonds are referred to as *guaranteed bonds*. A parent company, for example, may guarantee payment of the bonds issued by its subsidiaries, thus improving the marketability of such securities.

Obligations known as *income bonds* have been issued when business failure has resulted in corporate reorganization. Such bonds require the payment of interest only to the extent of the current earnings of the company.

The investor in acquiring governmental obligations looks to the taxing authority of the issuing unit for the measure of its ability to raise money to meet debt service requirements. In certain cases, government obligations are identified with government-owned enterprises, and principal and income payments are secured by revenues accruing from such operations.

Bonds may provide for their conversion into some other security at the option of the bondholder. Such bonds are known as *convertible bonds*. The conversion feature generally permits the owner of bonds to exchange his holdings into common stock. The bondholder is thus able to exchange his claim into an ownership interest if corporate operations prove successful and conversion becomes attractive. In the meantime he maintains the special rights of a creditor.

Other features that serve the issuer's interests may be included in the bond issue. For example, bonds are frequently issued with the provision that they are subject to call and retirement prior to their maturity date. When a corporation wishes to reduce its outstanding indebtedness, bondholders are notified of the portion of the issue to be surrendered, and they are paid in accordance with call provisions. Interest does not accrue after the date established for bond retirement.

Bonds may be classified in terms of their form of issuance as (1) *registered bonds* and (2) *bearer or coupon bonds*. Registered bonds call for the registry of the name of the bond owner on the books of the corporation. Transfer of bond ownership is similar to that for stock. When a bond previously issued is sold by the holder, the corporation transfer agent cancels the bond certificate surrendered by the seller

and issues a new certificate to the buyer. Interest checks are mailed periodically to the persons of record on the corporate books. Bearer or coupon bonds are not recorded in the name of the owner. Title to such bonds passes with delivery. Each bond is accompanied by coupons for individual interest payments covering the life of the issue. Coupons are clipped by the owner of the bond and presented to the bank for deposit or collection. The issue of bearer bonds eliminates the work of recording bond ownership changes and preparing and mailing periodic interest checks. But coupon bonds fail to offer the bondholder the protection found in registered bonds in the event bonds are lost or stolen. In some cases bonds provide interest coupons but require registry as to principal. Here, ownership safeguards are afforded while the routines involved in making interest payments are avoided.

Bonds are generally issued in \$1,000 denominations or par values. Interest is usually payable at semiannual intervals by the corporation or through a designated agent.

#### **BOND YIELD**

The yield that is offered on the purchase of bonds varies with the safety of the investment. When the financial condition and earnings of a corporation are such that payment of interest and principal on bonded indebtedness is assured, the interest rate that the company must offer to dispose of a bond issue is relatively low. As the risk factor increases, a higher interest return is necessary to attract investors. The interest rate stated on the bonds is known as the *contract rate* or *nominal rate*. While bonds provide for the payment of interest at a certain rate, this rate may not be the same as the prevailing or *market rate* for bonds of similar quality at the time the issue is sold. Furthermore, the market rate constantly fluctuates. It is these factors that result in the difference between bond face values and the prices at which they sell on the market.

The purchase of bonds at face value implies agreement between the contract rate of interest as specified on the bond and the prevailing market rate of interest. If the bond rate exceeds the market rate, then bonds will sell at a premium; if the bond rate is less than the market rate, the bonds will sell at a discount. The premium or the discount is the discounted value of the difference between the contract rate and the market rate of the series of interest payments. A declining market rate of interest subsequent to issuance of the bonds results in a rise in the market value of the bonds; a rising market rate of interest results in a decrease in the bond market value. The nominal rate corrected for the premium or the discount on the purchase gives the actual yield on the bonds, known as the *effective rate*.

Extended bond tables are available in determining the price to be paid for bonds if they are to provide a certain yield. A part of such a table is illustrated below:

VALUES TO THE NEAREST CENT OF  $3\frac{1}{2}\%$  BOND FOR \$1,000,000,  
INTEREST PAYABLE SEMIANNUALLY

YIELD	8 YEARS	$8\frac{1}{2}$ YEARS	9 YEARS	$9\frac{1}{2}$ YEARS	10 YEARS
3 00	1 035 328 16	1 037 269 12	1 039 181 40	1 041 065 42	1 042 921 60
3 05	1 031 731 35	1 033 470 91	1 035 184 35	1 036 872 05	1 038 534 40
3 10	1 028 148 92	1 029 688 74	1 031 205 06	1 032 698 24	1 034 168 63
3 15	1 024 580 81	1 025 922 53	1 027 243 45	1 028 543 88	1 029 824 15
3 20	1 021 026 97	1 022 172 22	1 023 299 43	1 024 408 88	1 025 500 87
3 25	1 017 487 33	1 018 437 72	1 019 372 91	1 020 293 15	1 021 198 67
3 30	1 013 961 83	1 014 718 97	1 015 463 81	1 016 196 57	1 016 917 43
3 35	1 010 450 41	1 011 015 89	1 011 572 06	1 012 119 06	1 012 657 06
3 40	1 006 953 00	1 007 328 42	1 007 697 56	1 008 060 53	1 008 417 43
3 45	1 003 469 55	1 003 656 48	1 003 840 23	1 004 020 87	1 004 198 45
3 50	1 000 000 00	1 000 000 00	1 000 000 00	1 000 000 00	1 000 000 00
3 55	996 544 28	996 358 91	996 176 78	995 997 81	995 821 97
3 60	993 102 35	992 733 15	992 370 48	992 014 22	991 664 27
3 65	989 674 12	989 122 64	988 581 03	988 049 13	987 526 77
3 70	986 259 56	985 527 31	984 808 35	984 102 46	983 409 38
3 75	982 858 60	981 947 09	981 052 36	980 174 09	979 311 99
3 80	979 471 17	978 381 92	977 312 97	976 263 96	975 234 50
3 85	976 097 23	974 831 72	973 590 11	972 371 95	971 176 80
3 90	972 736 72	971 296 44	969 883 70	968 497 99	967 138 79
3 95	969 389 57	967 775 99	966 193 67	964 641 99	963 120 36
4 00	966 055 73	964 270 32	962 519 92	960 803 84	959 121 42
4 05	962 735 14	960 779 36	958 862 39	956 983 48	955 141 85
4 10	959 427 74	957 303 03	955 221 00	953 180 79	951 181 57
4 15	956 133 49	953 841 28	951 595 67	949 395 71	947 240 47
4 20	952 852 31	950 394 04	947 986 33	945 628 13	943 318 45

Assume, for example, that one seeks the value of a \$1,000, 10-year,  $3\frac{1}{2}\%$  bond, interest payable semiannually, and bought to yield  $3\%$ . Reference to the column, "10 years" and the required yield line, " $3\%$ ", shows the value to be \$1,012.92; if this bond is bought to yield  $4\%$ , it would be worth only \$959.12.

This table can also be used to determine the effective rate on the purchase of a bond at an amount other than face value. To illustrate, assume that a \$1,000,  $3\frac{1}{2}\%$  bond due in 8 years is selling at \$1,025. Reference to the column "8 years" shows that a yield of  $3.15\%$  is provided on an investment of \$1,024.58, while a yield of  $3.10\%$  is provided on an investment of \$1,028.15. The effective rate is thus slightly less than  $3.15\%$ . The exact rate can be calculated by the process of interpolation. An interest decrease of  $.05\%$  is found in the price increase of \$3.57 (\$1,024.58 to \$1,028.15). Payment of \$1,025.00, or \$.42 in excess of \$1,024.58, reduces the  $3.15\%$  earnings rate by  $.42/3.57$

of .05%, or .006%. The effective rate, then, is  $3.15\% - .006\%$  or  $3.144\%$ .

**AMORTIZATION AND ACCUMULATION PROCEDURES**

An investment in bonds, whether short-term or long-term, is originally recorded at cost, which includes any fees incident to the purchase. As in the case of investments in stock, bonds acquired in exchange for assets or services are recorded at the fair market value of such considerations. When bonds together with other securities are acquired for one lump sum, equitable apportionment of such cost among the securities is required. Purchase on a deferred payment basis calls for recognition of asset and liability items. Payment for accrued interest as of the date of purchase requires separate recording, this amount to be subtracted from subsequent interest collections in measuring effective earnings.

In the case of bonds acquired as a temporary investment, investment cost is maintained in the accounts without adjustment. Interest is reported at amounts actually received. Upon disposition of the bonds, original cost is applied against net sales proceeds in arriving at the gain or the loss on the sale of such holdings. If a similar procedure were to be followed on long-term investments and bonds were held until maturity, a loss would emerge if bonds had been acquired at a premium and a gain if bonds had been acquired at a discount. But such "gains" and "losses" are in effect adjustments in interest of prior periods. A premium on bonds is paid in recognition of an interest rate that exceeds the rate prevailing at the time of bond purchase; hence interest earned is properly viewed as consisting of the interest received less the portion of the receipt that may be considered to be a recovery of the premium originally paid. Bonds are acquired at a discount in view of an interest rate that is less than the prevailing rate; here the interest earned is properly viewed as interest received increased by a portion of the bond discount that will be realized at bond maturity. While the attempt to refine income measurement by considering the change in bond value over its life is not warranted in the case of bonds acquired as a temporary investment, systematic adjustment for this factor is desirable where bonds are acquired on a long-term basis.

*Bond Premium Amortization.* A premium paid on bonds is charged against interest received over the life of the bonds. The bond account is credited and Interest Income is charged each period for the part of the premium that is written off. The book value of the bonds, then, moves to the maturity value of the bonds over the bond life, and the interest

account reports periodically the amount actually earned—the interest collected less that portion considered to be a recovery of a part of the premium originally paid. The reduction of bonds to par by periodic charges to income is referred to as *bond premium amortization*.

**Bond Discount Accumulation.** A discount on bonds acquired is added to bond interest received over the life of the bonds. The bond account is charged and Interest Income is credited each period for the part of the discount that is accumulated. Here, too, the book value of the investment moves to bond maturity value over the bond life, and the interest account reports periodically the amount actually earned—the interest collected increased by that portion of the discount considered realized. The increase of bonds to par by periodic credits to income is referred to as *bond discount accumulation*.

#### METHODS OF AMORTIZATION AND ACCUMULATION

The *straight-line* method of amortization or accumulation provides for the recognition of an equal amount of premium or discount each period. Use of the *compound-interest* or *scientific* method requires that the effective earning rate on the purchase of the bonds first be determined; interest income is then reported at the effective rate periodically, the difference between the amount reported as earned and the amount actually received being recognized as an adjustment to the bond account. For example, assume the purchase of 5-year bonds of \$100,000, interest at 6% payable semiannually, at a price of 104 $\frac{3}{4}$ . Reference to bond tables indicates the yield at this price to be approximately 5%. The following tabulations show the differences in results through use of the two methods:

#### AMORTIZATION OF PREMIUM — STRAIGHT-LINE METHOD

\$100,000 5-Year Bonds, Interest at 6% Payable Semiannually, Purchased at \$104,375

INTEREST PAYMENT	A INTEREST RECEIPT (6% of FACE VALUE)	B PREMIUM AMORTIZATION ( $\frac{1}{10} \times \$1,375$ )	C EFFECTIVE INTEREST (A - B)	D BOND CARRYING VALUE (D - B)
				\$104,375.00
1	\$3,000.00	\$437.50	\$2,562.50	103,937.50
2	3,000.00	437.50	2,562.50	103,500.00
3	3,000.00	437.50	2,562.50	103,062.50
4	3,000.00	437.50	2,562.50	102,625.00
5	3,000.00	437.50	2,562.50	102,187.50
6	3,000.00	437.50	2,562.50	101,750.00
7	3,000.00	437.50	2,562.50	101,312.50
8	3,000.00	437.50	2,562.50	100,875.00
9	3,000.00	437.50	2,562.50	100,437.50
10	3,000.00	437.50	2,562.50	100,000.00

**AMORTIZATION OF PREMIUM — COMPOUND-INTEREST METHOD**  
**\$100,000 5-Year Bonds, Interest at 6% Payable Semiannually, Purchased at \$104,375**  
**To Yield Approximately 5%**

INTEREST PAYMENT	A INTEREST RECEIPT (3% OF FACE VALUE)	B EFFECTIVE INTEREST (2½% OF BOND CARRYING VALUE)	C PREMIUM AMORTIZATION (A — B)	D BOND CARRYING VALUE (D — C)
				\$104,375.00
1	\$3,000.00	\$2,609.38 (2½% of \$104,375.00)	\$390.62	103,984.38
2	3,000.00	2,599.61 (2½% of \$103,984.38)	400.39	103,583.99
3	3,000.00	2,589.60 (2½% of \$103,583.99)	410.40	103,173.59
4	3,000.00	2,579.34 (2½% of \$103,173.59)	420.66	102,752.93
5	3,000.00	2,568.82 (2½% of \$102,752.93)	431.18	102,321.75
6	3,000.00	2,558.04 (2½% of \$102,321.75)	441.96	101,879.79
7	3,000.00	2,547.00 (2½% of \$101,879.79)	453.00	101,426.79
8	3,000.00	2,535.67 (2½% of \$101,426.79)	464.33	100,962.46
9	3,000.00	2,524.06 (2½% of \$100,962.46)	475.94	100,486.52
10	3,000.00	2,513.48 (\$3,000 — \$486.52) <sup>1</sup>	486.52	100,000.00

<sup>1</sup>2½% of \$100,486.52 would be \$2,512.16. However, use of 5% when the effective rate was not exactly 5% has resulted in a small discrepancy that requires compensation upon recording the final receipt of interest. The bond account is reduced to face value, interest income being reduced by the premium balance at the time of bond redemption.

The straight-line method of amortization offers a uniform interest amount for each period. The compound-interest method affords a uniform earnings rate based upon a declining investment balance; since each interest payment represents a partial return of the premium, the investment is reduced each period and earnings, in turn, are correspondingly less.

The use of the two methods when bonds are acquired at a discount is illustrated in the tables that follow. Here it is assumed that 5-year bonds of \$100,000, interest at 4% payable semiannually, are purchased to yield 5%, or at a price as shown by bond tables of \$95,623.93.

**ACCUMULATION OF DISCOUNT — STRAIGHT-LINE METHOD**  
**\$100,000 5-Year Bonds, Interest at 4% Payable Semiannually, Purchased at \$95,623.93**

INTEREST PAYMENT	A INTEREST RECEIPT (2% OF FACE VALUE)	B DISCOUNT ACCUMULATION (1/10 × \$1,376.07)	C EFFECTIVE INTEREST (A + B)	D BOND CARRYING VALUE (D + B)
				\$ 95,623.93
1	\$2,000.00	\$437.61	\$2,437.61	96,061.54
2	2,000.00	437.61	2,437.61	96,499.15
3	2,000.00	437.61	2,437.61	96,936.76
4	2,000.00	437.61	2,437.61	97,374.37
5	2,000.00	437.61	2,437.61	97,811.98
6	2,000.00	437.61	2,437.61	98,249.59
7	2,000.00	437.61	2,437.61	98,687.20
8	2,000.00	437.60	2,437.60	99,124.80
9	2,000.00	437.60	2,437.60	99,562.40
10	2,000.00	437.60	2,437.60	100,000.00

**ACCUMULATION OF DISCOUNT — COMPOUND-INTEREST METHOD**  
**\$100,000 5-Year Bonds, Interest at 4% Payable Semiannually, Purchased at \$95,623.93**  
**To Yield 5%**

INTEREST PAYMENT	A INTEREST RECEIPT (2% OF FACE VALUE)	B EFFECTIVE INTEREST (2½% OF BOND CARRYING VALUE)	C DISCOUNT ACCUMULATION (B-A)	D BOND CARRYING VALUE (D+C)
1	\$2,000.00	\$2,390.60 (2½% of \$95,623.93)	\$390.60	\$ 95,623.93
2	2,000.00	2,400.36 (2½% of \$96,014.53)	400.36	96,014.53
3	2,000.00	2,410.37 (2½% of \$96,414.89)	410.37	96,414.89
4	2,000.00	2,420.63 (2½% of \$96,825.26)	420.63	96,825.26
5	2,000.00	2,431.15 (2½% of \$97,245.89)	431.15	97,245.89
6	2,000.00	2,441.93 (2½% of \$97,677.04)	441.93	97,677.04
7	2,000.00	2,452.97 (2½% of \$98,118.97)	452.97	98,118.97
8	2,000.00	2,464.30 (2½% of \$98,571.94)	464.30	98,571.94
9	2,000.00	2,475.91 (2½% of \$99,036.24)	475.91	99,036.24
10	2,000.00	2,487.85 (\$2,000 + \$487.85) <sup>1</sup>	487.85	99,512.15
				100,000.00

<sup>1</sup>2½% of \$99,512.15 would be \$2,487.80. By earlier computations to the nearest cent, an element of error is introduced. Compensation for the error is made in the final charge, which consists of the payment made plus the discount balance on this date.

In the latter instance the compound-interest method offers a uniform earnings rate based upon a successively higher investment balance. Periodic earnings are composed of the cash received plus the increase that is considered to have taken place in the investment balance. As the investment goes up each period earnings are correspondingly greater.

The compound-interest method may be favored over the straight-line method because of the accuracy that it affords in income measurement. However, the straight-line procedure is normally preferred in practice because of its simplicity, except in those instances where large blocks of bonds are acquired at substantial premiums or discounts and use of this method would give results materially different from the scientific procedures. Straight-line amortization is accepted for income tax purposes. Use of the straight-line method is assumed in the remaining illustrations of this chapter.

#### **ACCOUNTING FOR LONG-TERM INVEST- MENTS IN BONDS**

The entries for a long-term investment in bonds are illustrated in the example that follows. Assume that an investor acquires 5% bonds, face value \$100,000, for \$107,000, with interest payable semiannually on April 1 and October 1. Bonds are acquired on July 1, 1953, and mature on April 1, 1962. Books are to be adjusted and closed at the end of each calendar year.

A schedule may be prepared by the investor to summarize premium amortization and earnings over the period the bonds are to be held.

These data can then be used in making periodic adjustments. The bond premium is to be spread over the period that bonds will be earning interest, July 1, 1953, to April 1, 1962, or 105 months. An amortization schedule is prepared as follows:

## AMORTIZATION SCHEDULE — STRAIGHT-LINE METHOD

PERIOD	A INTEREST RECEIVED (INCLUDING ADJUSTMENTS FOR ACCRUALS)	NUMBER OF MONTHS	PREMIUM AMORTIZATION			F BOND CARRYING VALUE (E - C)
			B FRACTION OF PREMIUM TO BE AMORTIZED	C AMOUNT OF PREMIUM AMORTI- ZATION (B × \$7,000)	D EFFECTIVE INTEREST (A - C)	
July 1 (acquisition date) to Dec. 31, 1953	\$2,500	6	6/105	\$ 400	\$2,100	\$107,000
Year Ended Dec. 31, 1954	5,000	12	12/105	800	4,200	106,600
Year Ended Dec. 31, 1955	5,000	12	12/105	800	4,200	105,800
Year Ended Dec. 31, 1956	5,000	12	12/105	800	4,200	105,000
Year Ended Dec. 31, 1957	5,000	12	12/105	800	4,200	104,200
Year Ended Dec. 31, 1958	5,000	12	12/105	800	4,200	103,400
Year Ended Dec. 31, 1959	5,000	12	12/105	800	4,200	102,600
Year Ended Dec. 31, 1960	5,000	12	12/105	800	4,200	101,800
Year Ended Dec. 31, 1961	5,000	12	12/105	800	4,200	101,000
Jan. 1 to Apr. 1, 1962 (ma- turity date)	1,250	3	3/105	200	1,050	100,200
		105	105/105	\$7,000		

Entries for bond ownership in 1953 and 1954 appear below:

Transaction	Entry
JULY 1, 1953 Purchased 100, \$1,000, 5%, bonds of Hope Corp. at 106½, bonds maturing on April 1, 1962. Interest is payable semiannually on April 1 and October 1. Payment was made as follows: Bonds of \$100,000 at 106½      \$106,750 Costs of purchase                      250 Accrued interest, April 1- July 1                                      1,250 \$108,250	Investment in Hope Corp. 5's      107,000 Interest Income      1,250 Cash      108,250
OCTOBER 1, 1953 Received semiannual interest.	Cash      2,500 Interest Income      2,500
DECEMBER 31, 1953 (a) To record accrued interest for 3 months, and (b) to amortize bond premium applicable to current year. Amortization: period held in current year, 6 months; total life of bond issue, 8½ years or 105 months; current amortization, 1½ × \$7,000, or \$400 (or 6 × \$66.66½, monthly amortization = \$400).	(a) Accrued Interest on Investment in Bonds      1,250 Interest Income.      1,250 (b) Interest Income      400 Investment in Hope Corp. 5's      400

Transaction	Entry	
JANUARY 1, 1954 To reverse 1953 accrued interest.	Interest Income Accrued Interest on Investment in Bonds	1,250  1,250
APRIL 1, 1954 Received semiannual interest.	Cash Interest Income	2,500 2,500
OCTOBER 1, 1954 Received semiannual interest.	Cash Interest Income	2,500 2,500
DECEMBER 31, 1954 (a) To record accrued interest for 3 months, and (b) to amortize bond premium applicable to current year, $\frac{1\frac{3}{4}}{10} \times \$7,000$ , or \$800 (or $12 \times \$66.66\frac{2}{3}$ , monthly amortization = \$800).	(a) Accrued Interest on Investment in Bonds Interest Income.. (b) Interest Income Investment in Hope Corp. 5's	1,250  800 800

Entries similar to those for 1954 will be made until 1962. The reversing entry required on January 1, 1962, and the entries on April 1, 1962, when the last interest payment is received, will be as follows:

Transaction	Entry	
JANUARY 1, 1962 To reverse 1961 accrued interest.	Interest Income Accrued Interest on Investment in Bonds	1,250  1,250
APRIL 1, 1962 (a) To record amortization for last 3-month period, $\frac{1\frac{3}{4}}{10} \times \$7,000$ , or \$200 (or $3 \times \$66.66\frac{2}{3}$ , monthly amortization \$200), and (b) to record receipt of semiannual interest and principal amount.	(a) Interest Income Investment in Hope Corp. 5's (b) Cash Investment in Hope Corp. 5's Interest Income	200  102,500 100,000 2,500

When bonds are acquired at a discount, the investment account is raised to the maturity amount by the process of accumulation as illustrated below:

Transaction	Entry	
OCTOBER 11, 1953 Purchased 100, \$1,000, 3% bonds of Atlas, Inc. at 96 $\frac{1}{2}$ , bonds maturing on March 1, 1959. Interest is payable semiannually on March 1 and September 1. Payment was made as follows: Bonds of \$100,000 at 96 $\frac{1}{2}$ \$96,500.00 Costs of purchase 250.00 Interest, Sept. 1–Oct. 11, 40 days, at 3% 333.33 \$97,083.33	Investment in Atlas, Inc. 3's Interest Income Cash	96,750.00 333.33 97,083.33

Transaction	Entry
<b>DECEMBER 31, 1953</b> (a) To record accrued interest for 4 months, and (b) to accumulate bond discount applicable to current year. Accumulation: period held in current year, 3 months; total life of bond issue, $5\frac{1}{2}$ years, or 65 months; current accumulation $\frac{3}{65} \times \$3,250$ , or \$150 (or $3 \times \$50$ , monthly accumulation — \$150).	(a) Accrued Interest on Investment in Bonds 1,000.00 Interest Income 1,000.00 (b) Investment in Atlas, Inc. 3's 150.00 Interest Income 150.00
<b>JANUARY 1, 1954</b> To reverse 1953 accrued income.	Interest Income 1,000.00 Accrued Interest on Investment in Bonds 1,000.00
<b>MARCH 1, 1954</b> Received semiannual interest.	Cash 1,500.00 Interest Income 1,500.00
<b>SEPTEMBER 1, 1954</b> Received semiannual interest.	Cash 1,500.00 Interest Income 1,500.00
<b>DECEMBER 31, 1954</b> (a) To record accrued interest for 4 months, and (b) to accumulate bond discount applicable to current year, $1\frac{2}{3} \times \$3,250$ or \$600 (or $12 \times$ monthly accumulation, \$50 = \$600).	(a) Accrued Interest on Investment in Bonds 1,000.00 Interest Income 1,000.00 (b) Investment in Atlas, Inc. 3's 600.00 Interest Income 600.00

It is necessary to set some arbitrary minimum time unit in the amortization of bond premium or the accumulation of bond discount. In this chapter the month is used as the minimum unit. Transactions occurring during the first half of the month are treated as though they were made at the beginning of the month; transactions occurring during the second half are treated as though made at the start of the following month. Use of a longer term, such as amortization to the nearest quarter or half year, is possible, although this offers less accuracy than use of the shorter time unit.

Amortization of bond premium and accumulation of bond discount are recognized in the foregoing examples at the end of the investor's fiscal period and also just prior to bond redemption. It would be possible to recognize amortization or accumulation at the time of the receipt of each interest payment. But it would still be necessary to bring the amortization or the accumulation up to date at the end of the year when any accrued interest is recognized. Instead of making the adjustment several times a year and for fractional periods, it is more convenient to record it for a full year at the end of each fiscal period, except for the first and last years when fractional parts of a year are involved.

It is possible to record bonds at realizable par values with premiums or discounts on purchases shown in separate accounts. Premium and discount balances are then written off by amortization entries during the life of the bonds, leaving only the bonds account balance at maturity value. Any balance in a premium or a discount account is considered a valuation item affecting the bond investment account for statement purposes. This method is seldom found in practice.

**SALE OF BONDS PRIOR TO MATURITY** Sometimes bonds held as a long-term investment are sold prior to their maturity date. Since the carrying value of the investment has been adjusted during the period of bond ownership by entries for amortization or accumulation, it is evident that the basis for calculating gain or loss cannot be original cost. The book value of the bonds must be determined as of date of sale. This requires bond premium or discount adjustment to date of sale. The difference between the book value on the date of sale and the cash proceeds from the sale represents the net gain or loss. To illustrate a sale, assume that the bonds of Atlas, Inc. in the previous example are not held until maturity but are sold at 97 plus accrued interest on February 1, 1955. Entries in 1955 are:

Transaction	Entry
<b>JANUARY 1, 1955</b>	
To reverse 1954 accrued interest.	Interest Income . . . . 1,000.00
	Accrued Interest on Investment in Bonds . . . . . 1,000.00
<b>FEBRUARY 1, 1955</b>	
To record accumulation of discount to date of sale:	Investment in Atlas Inc. 3's . . . . . 50.00
1/65 × \$3,250, or \$50.	Interest Income . . . . . 50.00
To record sale of bonds:	
(a) Accrued interest, September 1–February 1 . . \$1,250.00	(a) Cash . . . . . 1,250.00
	Interest In- come . . . . . 1,250.00
(b) Book value of bonds:	(b) Cash . . . . . 96,800.00
Cost . . . . . \$96,750.00	Loss on Sale of Atlas, Inc. 3's . . 750.00
Plus discount accu- mulation to date of sale:	Investment in Atlas, Inc. 3's . . . 97,550.00
1953 \$150.00	
1954 600.00	
1955 50.00 800.00	
\$97,550.00	
Sales proceeds \$97,000.00	
Less cost of sale 200.00	
Net proceeds . . 96,800.00	
Net loss . . . . . \$ 750.00	

*The two cash entries given may be combined in the form of a single compound entry. It should be observed that the bond interest income for January, 1955, is \$300, consisting of interest received, \$1,250, decreased by the interest relating to 1954, \$1,000, and increased by discount accumulation for the current period, \$50. This is the same monthly interest that was recognized in 1953 and 1954.*

When bonds are acquired at a premium and bond interest is subject to federal income tax, the bondholder is permitted to report as income (1) the actual amount received or (2) the amount received less the amortization of bond premium. If the actual amount received is reported as income, the bondholder must use the original cost of the bonds as a basis for calculating the taxable gain or loss arising from the subsequent sale or redemption of the bonds; if income is reduced by amortization, an adjusted investment balance is the basis for calculation of gain or loss on the ultimate disposal of the bond. In the case of certain classes of government bonds whose income is wholly tax exempt, federal tax laws require that the premium must be amortized. Since the interest is nontaxable, the deduction for the amortization is not reflected on the return; however, the basis of the bonds is reduced for calculating the gain or the loss arising upon their ultimate disposal.<sup>1</sup>

In the case of bonds acquired at a discount, the bondholder must report as income for tax purposes the actual interest received. Upon disposal of the bonds, he reports the difference between proceeds and cost as the taxable gain or loss. An exception is made in the case of certain United States savings bonds where a taxpayer may elect to report as income the annual increment in the value of bonds acquired at a discount according to a table of redemption values as stated on the bonds. When the income is reported as the bond value goes up, no gain is recognized when the bond is redeemed.

When an investment in bonds consists of several purchases, and part of the holdings are sold, tax laws call for the same rules that are applied in the case of investments in stocks. Unless the bonds sold can be identified as to lot and related cost, cost must be assigned to bonds sold by the first-in, first-out rule, earliest costs thus being applied to sales proceeds in calculating the taxable gain or loss.

#### **BOND REDEMPTION PRIOR TO MATURITY**

Bonds that are callable by the issuer prior to their maturity generally provide for the payment of a premium to the holder in the event this option is exer-

<sup>1</sup>Interest on certain classes of government bonds is only partially tax-exempt (interest is subject to surtax rates only). In these instances, premium amortization is mandatory as to a corporate owner but elective as to all other owners.

cised. To illustrate, bonds issued on January 1, 1950, and due on January 1, 1970, may provide a table of redemption values as follows:

Redeemable January 1, 1955, to December 31, 1959, at 105

Redeemable January 1, 1960, to December 31, 1964, at 103

Redeemable January 1, 1965, to December 31, 1969, at 101

When bonds are acquired at a premium, conservatism calls for an amortization policy that will prevent the bonds from being reported at more than their redemption values at the various call dates. For example, assume in the example above that bonds of \$10,000 are acquired for \$10,800 on January 1, 1952. Regular premium amortization and accelerated amortization based upon bond redemption values of \$10,500, \$10,300 and \$10,100 are compared below:

REGULAR AMORTIZATION	ACCELERATED AMORTIZATION
\$800 ÷ 18	(\$10,800 - \$10,500) ÷ 3 years (1952-1954) = \$100.00 per year
years = \$44.44 per	(\$10,500 - \$10,300) ÷ 5 years (1955-1959) = \$40.00 per year
year (1952-1970)	(\$10,300 - \$10,100) ÷ 5 years (1960-1964) = \$40.00 per year
	(\$10,100 - \$10,000) ÷ 5 years (1965-1969) = \$20.00 per year

If regular amortization procedures are followed on the books of the investor, bond redemption prior to maturity will result in a recovery of cash that is less than bond carrying value and will require recognition of a loss that nullifies in part the earnings recognized in the past. Accelerated amortization reduces the investment to its redemption value; bond redemption value is assumed for earnings measurement purposes and the need for recognition of a loss upon redemption is avoided. Obviously, a purchase of bonds at a discount or a purchase of bonds at a premium that is reduced by normal amortization to an amount not greater than redemption value calls for no special treatment.

The contract with bondholders normally provides for the payment of accrued interest to the bond call date. When it is provided that bonds are callable on regular interest payment dates, payment is made at the call price plus interest for a full period.

## BOND CONVERSION

When bonds are converted into another security in accordance with terms of the issue, accounts are opened for the newly acquired security and the bond investment balance is closed. The procedures that are followed by the investor are similar to those previously described for the exchange of stock for other securities. The newly acquired security is recorded at its market value, and the difference between this value and the book value of the bonds surrendered is reported as gain or loss. Before an

exchange is recorded, the investment account should be brought up to date for discount accumulation or premium amortization. Any interest collected at the time of the exchange is reported as interest income.

To illustrate bond conversion, assume that \$1,000 A Co. 5% bonds are convertible into 40 shares of A Co. common stock, par \$25. An investor exchanges bonds of \$10,000, book value as brought up to date, \$9,850, for 400 shares of common stock that are quoted on the market at the time of exchange at \$26 per share. The exchange is completed three months after an interest payment date. The exchange is recorded as follows:

Cash	125	
Investment in A Co. Common Stock	10,400	
Investment in A Co. 5% Bonds		9,850
Gain on Exchange of Bonds		550
Interest Income		125

## BOND VALUATION

The market value of bonds varies with changes in the financial strength of the issuing company, changes in the level of interest rates, and changes in the remaining life of the issue. In the absence of material price declines, bonds held as long-term investments may be reported on the balance sheet at book value. This book value approaches par as the bonds move closer to maturity. To this extent, then, the accounting method can be considered to follow a similar change that is taking place on the market as the bond life is reduced and a correspondingly lower valuation is attached to the difference between the actual rate and the market rate for remaining interest payments. Although investments are properly reflected at book value, parenthetical disclosure of market value of the securities is desirable as a means of making the statements more informative.

A serious decline in bond value, however, as a result of unfavorable developments relating to the issuer, cannot be ignored. Assume, for example, that the issuing company has found it impossible to meet sinking fund requirements, which suggests that it may have difficulties in meeting the obligation at its maturity. Even more serious, assume that there has been default on bond interest payments. When significant investment loss is indicated, entries to record the estimated shrinkage are in order.

When bonds are purchased "flat," that is, when interest on bonds is in arrears and one price is paid for the bonds together with all accrued and unpaid interest, this price is recorded as the bond investment cost.

*Any amounts subsequently received on the bonds, whether designated as payments of principal or defaulted interest, should be treated as a recovery of investment cost. No interest should be accrued on the bonds until solvency of the debtor is restored and the regular receipt of interest is assured. Such bonds are reported at their unrecovered cost with full information as to the nature of the investment.*

When stocks and bonds are acquired for trading by a security dealer, it is considered accepted practice to value any "inventory" at current market prices. This method when elected by the dealer for tax reporting purposes must be used consistently.

### **INVESTMENT IN U. S. SAVINGS BONDS**

A number of long-term savings bonds are made available to investors by the United States Government. These vary as to denominations, yield, life, and redemption values, and contain specific limitations as to availability to certain classes of purchasers, maximum annual purchases, transferability, redemption, etc. Special accounting problems arise with respect to such savings bonds. These are considered in the sections that follow.

*Bonds Providing for No Interest Payments but Acquired at a Discount (Series E, F, J).* Certain U. S. savings bonds provide for no periodic interest payments but are sold at a discount that is to represent full compensation for holding the bonds. Interest accrues on the bonds through increases in redemption values, the bonds becoming increasingly more valuable as they move to maturity. In order to encourage the investor to hold the bonds until maturity, bond value increments are set so that the rate earned on the bonds increases with the length of time held.

To illustrate the accounting problems for an investment in this class, assume the following: Series E bonds calling for payment of \$10,000 after 10 years are acquired at \$7,500 in 1950. The nominal interest rate here is zero; sale at the discount provides effective interest, assuming semiannual compounding, of approximately 2.9% if bonds are held for their full 10-year life.<sup>1</sup> Four possibilities are open to the investor in recognizing earnings on his investment:

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<sup>1</sup>A new Series E bond was issued in 1952. This series is similar to the old series in issue and maturity values, but maturity is only 9 years and 8 months after issue, thus resulting in an effective interest rate of 3% if held to maturity. Both the old and the new Series E bonds may be held beyond their maturity date for an additional period equal to their original life; such bonds will continue to earn interest at a rate equal to or slightly in excess of their original rate. No action is required of an owner desiring to take advantage of such an option to extend the life of his bond holdings. The full bond value is payable when bonds are presented for redemption.

(1) The bonds may be carried at original cost, no income being recognized until bond maturity when the investment is raised to the full redemption value and income is credited for this increase. This procedure provides for income recognition on a cash basis.

(2) The discount may be accumulated according to the scheduled increases as stated on the bond, the bond account being increased and income credited periodically. This method emphasizes cash realizable values and results in increasing earnings as bonds approach maturity.

(3) The discount may be accumulated on a straight-line basis, the bond account being charged and income credited periodically. This method provides for accumulation of discount in terms of equal amounts and without regard to realizable values.

(4) The discount may be accumulated in terms of the effective earnings rate, the bond account being charged and income credited periodically. This method provides for accumulation of discount in terms of an equal periodic yield over the life of the issue and without regard to realizable values.

Increases in bond values are compared below:

END OF YEAR HELD	INCOME RECOGNITION AT MATURITY	INCOME RECOGNITION ACCORDING TO REDEMPTION VALUES	INCOME RECOGNITION ON STRAIGHT-LINE BASIS	INCOME RECOGNITION ON COMPOUND- INTEREST BASIS
1			\$ 25.00	\$ 21.91 <sup>1</sup>
2		\$ 10.00	25.00	22.55
3		10.00	25.00	23.21
4		20.00	25.00	23.88
5		20.00	25.00	24.58
6		20.00	25.00	25.30
7		30.00	25.00	26.04
8		40.00	25.00	26.80
9		40.00	25.00	27.58
10	\$250.00	60.00	25.00	28.15
	<u>\$250.00</u>	<u>\$250.00</u>	<u>\$250.00</u>	<u>\$250.00</u>

<sup>1</sup>First six months, 1.45% of \$750.00..... \$10.88  
 Second six months, 1.45% of \$760.88 (\$750.00 + \$10.88) . . . 11.03

Interest for first year, 2.9% compounded semiannually . . . . \$21.91

Interest for subsequent years is similarly calculated in terms of the regularly increasing investment balance.

When the investor expects to hold the bonds for the full 10-year period, the compound-interest basis provides for the accurate recognition of income. However, for tax purposes the holder must elect one of the following methods: (1) recognition of full interest income upon redemption or bond maturity or (2) recognition of interest periodically according to the redemption value increases as reported on the bonds.

*Bonds Providing for Fixed Interest Payments but with Varying Redemption Values (Series G and K).* Certain U. S. bonds are sold at par and provide for periodic interest payments at a certain rate. Such a rate is effective, however, only if bonds are held for their full life. To achieve this, bonds provide for successively decreasing redemption values for a number of years, whereupon values successively rise until full value is reached once more at maturity.

To illustrate, assume the purchase of a Series G  $2\frac{1}{2}\%$ , \$1,000 bond. The investor receives \$12.50 semiannually. But the value of the bond for redemption purposes shrinks to a value of \$947 at the end of the fifth year. From this point, the bond value rises until par is reached at bond maturity. Redemption before maturity, then, results in loss of a part of the interest previously received and a reduction in the effective earnings below the  $2\frac{1}{2}\%$  rate. Redemption values when considered together with interest receipts provide for a gradually increasing yield over the life of the issue until maturity is reached and bonds realize original cost; the  $2\frac{1}{2}\%$  yield is fully confirmed at this point.

Since such bonds are acquired as long-term holdings, it is normally acceptable to recognize the full amounts received as income without adjustments to the investment account to reflect changes in redemption values. However, if investments are carried at cost, appropriate disclosure should be made on the accounting statements concerning current redemption values and the implications of redemption prior to maturity.

*Bonds Providing for Varying Interest Payments but with Fixed Redemption Values (Series H).* A series of U. S. savings bonds is issued at par and is redeemable at this value throughout the bond life, with interest paid at increasing rates over the bond life. The full yield relating to such bonds is achieved only if they are held until maturity. For example, Series H bonds pay interest at .80% for the first 6 months, 2.50% per year for the next  $3\frac{1}{2}$  years, and 3.40% per year for the last  $5\frac{2}{3}$  years, providing an investment yield of approximately 3.00% if held until maturity, but a lower yield if redeemed prior to maturity. When the investor intends to hold the bonds until maturity and wishes to show the yield on the investment in terms of the full bond life, it would be possible to show an accrual of interest in early years for the difference between amounts earned and amounts collected. Amounts collected in excess of the effective yield in later years would be reported as a reduction in the accrued interest balance.

The special features of U. S. savings bonds described in the preceding paragraphs are summarized in the table on the opposite page.

## UNITED STATES SAVINGS BONDS

[illegible]

**LONG-TERM NOTES  
AND MORTGAGES**

*Investments in long-term notes and mortgages have many characteristics in common with bond investments. During their life they provide interest, and at maturity they call for payment of a specified amount of cash. Long-term notes and mortgages should be recorded at cost, or at their fair market value when acquired in connection with a sale of property. Any difference between their acquisition value and their maturity value calls for adjustments to income over the life of the investment. Mortgage and note holdings may be acquired at considerable discount when there is a relatively large risk element. Such acquisition raises the question of possible failure to recover the full amount of the obligation at maturity. When such a possibility is foreseen, the investor may choose to carry the investment without adjustment. If full payment is made at maturity, the discount is recognized as a gain at that time. Mortgages and notes should be analyzed in terms of installment maturities; the portion of the receivable due within one year is reported as a current asset, the balance as a long-term investment.*

## QUESTIONS

1. Distinguish between (a) secured and unsecured bonds, (b) collateral trust and debenture bonds, (c) guaranteed bonds and income bonds, (d) convertible bonds and callable bonds, and (e) coupon bonds and registered bonds.

2. What is meant by market rate, nominal rate, and effective rate as relating to bonds? Which of these rates changes during the lifetime of the bond issue?

3. Distinguish between the standards of valuation applied to long-term investments in bonds and the standards of valuation applied to short-term investments in such securities. What reasons can you offer for any differences?

4. Distinguish between straight-line and compound-interest methods of bond premium amortization. What arguments can be offered in support of each method?

5. (a) What is meant by purchase of bonds "flat"? (b) What special accounting procedure should be followed for such an investment?

6. (a) What special amortization problem is faced when bonds are acquired at a premium and such bonds are subject to redemption at less than the amount paid? (b) Will the same problem arise when bonds are acquired at a discount?

7. P. A. Ward acquires U. S. savings bonds. These bonds pay no interest but provide for increasing redemption values. Ward feels that there is no need to recognize any gain on the holdings until redemption. (a) What arguments can be raised in support of the practice advocated by Ward? (b) What arguments can be raised in support of the periodic recognition of income on the investment?

8. An investor makes a significant investment in U. S. Series E savings bonds. He wishes to recognize income on the bonds through the accumulation of discount periodically. (a) What three methods of discount accumulation can you suggest? (b) What are the advantages of each method and which method in your opinion is preferred?

9. When bonds are converted for another security, how should the exchange be recorded, assuming that (a) the new security acquired has a known market value, (b) the security acquired does not have a market value?

10. A. C. McArthur acquires a second-mortgage note, face value \$10,000, for \$6,000. McArthur feels that in view of the risks involved on this paper, any future collections of both principal and interest should be treated as reductions in the investment balance until he has recovered \$6,000. Thereafter, any collections of principal and interest can be wholly regarded as earnings on the investment. What would be your comment on McArthur's stand?

**EXERCISES**

1. A \$1,000,  $3\frac{1}{2}\%$  bond, interest payable semiannually, was acquired on January 1, 1953. The bond matures on January 1, 1962. Using the bond table on page 364, determine the price to be paid for the bonds assuming they are purchased on a basis to yield (a) 3%, (b) 4%.

2. Investment is made in a \$1,000 bond, interest at  $3\frac{1}{2}\%$ , payable semiannually, maturing 8 years from date of purchase. Using the bond table on page 364, calculate the exact yield on the bond assuming that it is purchased for (a) \$1,020, (b) \$975.

3. A \$1,000 bond maturing in 3 years, interest at 5% payable semiannually, is purchased for \$1,028. It is determined that this price will produce a yield of 4%. Prepare a bond amortization table using (a) straight-line amortization, (b) scientific amortization.

4. The Stewart Corporation acquires \$100,000 of  $3\frac{1}{2}\%$  bonds of Western Stores, Inc. on a basis to yield 3.8% paying \$97,523.45. Interest is payable semiannually and the bonds mature in 10 years.

(a) What entries would be made for the receipt of the first two interest payments, assuming discount accumulation on each interest date by (1) the straight-line method and (2) the compound-interest method?

(b) Assuming that the purchase was made on a 2.75% basis, \$106,518.28 being paid, what entries would be made upon receipt of the first two interest payments, assuming premium amortization on each interest date by (1) the straight-line method and (2) the compound-interest method?

5. Bonds of \$10,000 due in 5 years and paying interest semiannually at 6%, were purchased at \$10,438, a price to yield 5% on the investment. Give the entries for the bond purchase, the semiannual interest receipts, and the premium amortization for the first two years of bond ownership, assuming earnings are recognized at 5%.

6. On June 1, 1953, Arthur Welk purchases Rupp Company bonds, face value \$10,000, for \$10,500, plus accrued interest. Bonds pay interest at the rate of  $4\frac{1}{2}\%$  semiannually on April 1 and October 1, and they mature on October 1, 1961. What are the entries that will be made on Welk's books to record (a) purchase of the bonds on June 1, (b) receipt of interest on October 1, and (c) the adjustment for accrued interest at the end of the fiscal period, December 31, 1953? (Assume amortization for bond premium by the straight-line method.)

7. F. A. Peterson acquired \$15,000 of Murphy Motors 4% bonds on July 1, 1951. Bonds were acquired at 95; they pay interest semiannually on April 1 and October 1, and they mature on April 1, 1955. The fiscal period for Peterson is the calendar year; discount is accumulated on the bonds by the straight-line method. On March 1, 1954, Peterson sold the bonds for  $98\frac{1}{2}$  plus accrued interest. Give the entry to record the sale of the bonds on this date.

8. On January 1, 1953, Morris Mason purchases \$10,000 of Armstrong Company 5% bonds at 106. Bonds are due on January 1, 1968, but may

be redeemed by the company at earlier dates at premium values as follows:

January 1, 1956, to December 31, 1959, at 105  
 January 1, 1960, to December 31, 1963, at 103  
 January 1, 1964, to December 31, 1967, at 101

What amortization amounts do you recommend that Mason recognize over the life of the bond issue?

9. Burton Rhodes shows Broyles Corp. bonds of \$5,000 on his books at a book value of \$4,650 on July 1, 1953. Each \$1,000 bond is convertible into 20 shares of the issuing company's common stock, and Rhodes exchanges the bonds for stock on this date. Stock on the date of conversion is quoted at  $49\frac{1}{8}$ ; accrued interest on bonds of \$41.67 is received together with the stock. What entry is made to record the exchange?

10. Arthur Bailey acquires new Series E bonds on January 1, 1953. Bonds of \$1,500 are acquired at \$1,125, a price that results in a yield of 3% compounded semiannually if bonds are held until maturity. Redemption values for each \$100 value are listed on the bonds as follows:

0 to $\frac{1}{2}$ year	\$75.00
$\frac{1}{2}$ to 1 year	75.40
1 to $1\frac{1}{2}$ years	76.20
$1\frac{1}{2}$ to 2 years	77.20

What interest will Bailey show for 1953 and for 1954 if income is to be recognized by accumulation of bond discount (a) in terms of bond redemption values, (b) by use of the straight-line method, (c) by use of the compound-interest method?

11. On March 1, 1953, Lyle Moorhouse acquired \$10,000 of  $4\frac{1}{2}\%$  bonds of the Magnolia Corporation in exchange for land that he had acquired at a cost of \$4,800. Bonds were quoted on the market on that date at  $94\frac{1}{2}$ . Interest on the bonds was payable on April 1 and October 1; the bonds mature on October 1, 1957.

(a) What entries would be made by Moorhouse in 1953 to record (1) the acquisition of the bonds, (2) the receipt of interest on April 1 and October 1, and (3) the accrual of interest and the accumulation of discount on December 31?

(b) Assume that Moorhouse made the following entry in recording the bonds in 1953:

Mar. 1 Magnolia Corporation Bonds	10,000
Land	4,800
Gain on Sale of Land	5,200

Interest receipts in 1953 were recorded as credits to income; no entry for accrued interest was made on December 31. Give any correcting entries that should be made at the beginning of 1954 so that the accounts may reflect balances as would be obtained in (a) above.

## PROBLEMS

~~12-1~~ The Florence Co. acquired \$10,000 of Powell Corp. 5% bonds, interest payable semiannually, bonds maturing in 5 years. The bonds were acquired at \$10,450, a price to yield approximately 4% on the investment.

*Instructions:* (1) Prepare tables to show the periodic adjustments to the investment account and the annual bond earnings assuming adjustment by each of the following methods: (a) the straight-line method and (b) the compound-interest method.

(2) Give entries for the interest receipts and adjustment for the first year of bond ownership, assuming use of (a) the straight-line method, and (b) the compound-interest method.

13-2. The Bedford Corporation acquired \$10,000 of Western Co.  $4\frac{1}{2}\%$  bonds, interest payable semiannually, bonds maturing in 5 years. Bonds were acquired at \$9,360, a price to yield approximately 6% on the investment.

*Instructions:* (1) Prepare tables to show the periodic adjustments to the investment account and the annual bond earnings, assuming adjustment by each of the following methods: (a) the straight-line method, and (b) the compound-interest method.

(2) Give entries for the interest receipts and adjustments for the first year of bond ownership, assuming use of (a) the straight-line method, and (b) the compound-interest method.

~~12-3~~ The Wellington Investment Co. acquired \$150,000 of Warness Co.  $3\frac{1}{2}\%$  bonds, interest payable semiannually, at a price to yield 4%. The bonds have a remaining life of 10 years.

*Instructions:* (1) Using the bond table on page 364, determine the amount paid for the bonds.

(2) Prepare a table of discount accumulation by the compound-interest method for the first two years of ownership.

(3) Give the entries to be made by the investor for the bond purchase, the semiannual interest receipts, and the discount accumulation for the two-year period.

~~13-4~~ The Parker Investment Co. acquires \$50,000 of Bagley Corp.,  $3\frac{1}{2}\%$  bonds, interest payable semiannually, at a price to yield  $3\frac{1}{4}\%$ . The bonds have a remaining life of 8 years.

*Instructions:* (1) Using the bond table on page 364, determine the amount paid for the bonds.

(2) Prepare a table of premium amortization by the compound-interest method for the first two years of ownership.

(3) Give the entries to be made by the investor for the bond purchase, the semiannual interest receipts, and the premium amortization for the two-year period.

13-5. On May 1, 1950, the Walton Co. acquired \$20,000 of Burbank Corp.  $4\frac{1}{2}\%$  bonds at  $98\frac{1}{2}$  plus accrued interest. Interest on bonds is payable semiannually on March 1 and September 1, and bonds mature on September 1, 1953.

On May 1, 1951, the Walton Co. sells bonds of \$5,000 for  $100\frac{3}{4}$  plus accrued interest.

On July 1, 1952, \$5,000 of bonds are exchanged for 1,000 shares of Burbank Corp. no-par common, quoted on the market on this date at  $5\frac{1}{8}$ . Interest is received on bonds to date of exchange.

On September 1, 1953, remaining bonds are redeemed.

*Instructions:* Give journal entries for 1950-1953 to record the foregoing transactions on the books of the Walton Co. including any adjustments that are required at the end of each fiscal year ending on December 31. (Show all calculations.)

**13-6.** On July 1, 1951, Norton Investors acquired \$100,000 of Westbrook Co.  $5\frac{1}{2}$  bonds at  $98\frac{1}{2}$  plus accrued interest. Interest on bonds is payable semiannually on February 1 and August 1, and bonds mature on August 1, 1953.

On August 1, 1952, the Westbrook Co. offers additional common stock for sale at par, \$100, and offers bondholders the privilege of exchanging \$1,000 bonds for 10 shares of stock. Norton Investors exchange \$50,000 in bonds for 500 shares of common on this date. Interest is received on bonds to date of exchange.

On April 1, 1953, bonds of \$20,000 are sold at  $99\frac{3}{4}$  plus accrued interest.

On August 1, 1953 bonds mature and collection is made on those held.

*Instructions:* Give journal entries for 1951-1953 to record the foregoing transactions on the books of Norton Investors, including any adjustments that are required at the end of each fiscal year ending on December 31. (Show all calculations.)

**13-7.** Hale, Inc. completes the following transactions, among others, during 1953:

Mar. 1. Purchased \$100,000 of Carter Sales Corporation First Mortgage bonds, maturity date August 1, 1958, interest of  $4\frac{1}{2}\%$ , payable semiannually on February 1 and August 1, at  $91\frac{1}{2}$  plus brokerage of \$300 and accrued interest.

April 5. Purchased 800 shares of Walsh Motors, Inc. common, par \$50, for \$45,500.

May 2. Received a common stock dividend on Walsh Motors, Inc. common, of 1 share for every 4 shares held.

July 15. Was granted the right to purchase 1 share of stock at par for every 5 shares of Walsh Motors, Inc. stock held, the option expiring August 15. Stock had a market value of \$62.50 ex-rights, and each right had a value of \$2.50 on the date the rights were issued.

Aug. 1. Received semiannual interest on bonds held. (Bond discount accumulation by the straight-line method is recorded at the time interest is received.)

Aug. 11. Sold Carter Sales Corporation bonds of \$20,000 at  $97\frac{1}{2}$  and accrued interest, less fees of sale, \$50; also exercised option on stock rights on this date.

Oct. 1. Sold 300 shares of Walsh Motors, Inc. for \$16,800. (The first-in, first-out method is used in calculating the cost of shares sold.)

Dec. 31. Adjusted the accounts relative to the foregoing.

*Instructions:* Journalize the foregoing. (Show calculations.)

**13-8.** Information relative to the R. R. Miller Company's investments during 1953 follows:

- Jan. 6. Purchased 200 shares of Vale common stock, \$50 par, for \$17,700.  
 Feb. 11. Purchased as a long-term investment \$100,000 of Williams First Mortgage Bonds, maturity date October 1, 1957, interest of 6% payable semiannually on April 1 and October 1, at 95 plus brokerage of \$160 and accrued interest.  
 Mar. 15. Received a cash dividend of 75 cents and stock dividend of 1 share for every 4 held on Vale common stock.  
 April 1. Received semiannual interest on bonds held. (Bond discount accumulation by the straight-line method is recorded at the time interest is received.)  
 June 15. Received a cash dividend of 75 cents on Vale common stock. Also was granted the right to purchase 1 share of stock at 54 for every 5 shares held, the option expiring July 1. Stock had a market value of \$59 ex-rights, and each stock right had a market value of \$1 on the date the rights were issued.  
 June 30. Sold 100 rights at  $1\frac{1}{2}$  and exercised option on remaining rights.  
 July 18. Purchased 100 shares of Vale common stock at 55.  
 Sept. 12. Sold \$20,000 of Williams bonds at  $95\frac{1}{2}$  and accrued interest less brokerage fees of \$40.  
 Sept. 15. Received a cash dividend of 75 cents on Vale common stock.  
 Oct. 1. Received semiannual interest on bonds held.  
 Dec. 15. Received a regular cash dividend of 75 cents and an extra dividend of 25 cents on Vale common stock.  
 Dec. 28. Sold 300 shares of Vale common stock for \$17,200. (The first-in, first-out method is used in calculating the cost of shares sold.)  
 Dec. 31. Adjusted the accounts relative to the foregoing.

*Instructions:* Journalize the foregoing. (Show calculations.)

**13-9.** In auditing the books for the Wharton Corporation as of December 31, 1953, before the accounts are closed, you find the following long-term investment account balance:

INVESTMENT IN BROWNING CORP. 6'S (Maturity Date, May 1, 1959)

January 22, 1953	March 10, 1953
Bonds, \$100,000 par, acquired	Proceeds from sale of bonds,
at $102\frac{1}{4}$ plus accrued interest. 103,600	\$20,000 par and accrued interest . . . 21,300
	May 1
	Interest received . . 2,400
	November 1
	Amount received on call of bonds, \$20,000 par, at $102\frac{1}{2}$ and accrued interest 22,900

*Instructions:* (1) Give the entries that should have been made relative to the investment in bonds, including any adjusting entries that would be made on December 31, the end of the fiscal year. (Assume straight-line amortization entry at the end of the year.)

(2) Give the journal entries required at the end of 1953 to correct and bring the accounts up to date in view of the entries that were actually made.

## Investments

### Funds and Miscellaneous Items

#### KINDS OF FUNDS

Cash or other assets set apart for some specified common purpose are called *funds*, *sinking funds*, or *redemption funds*. Certain funds are appropriately reported as current items, since they are to be used for specified current purposes such as daily expenses and the discharge of current obligations. Examples of these are petty cash funds; payroll funds; withholding tax, social security, and other tax funds; interest funds; and dividend funds. Other funds consisting of cash and investments built up over a long term for such purposes as the acquisition or the replacement of properties, the retirement of long-term indebtedness, the redemption of capital stock, or provision for possible future contingencies or obligations are properly considered noncurrent items and are reported under the investment heading. Examples of these funds are bond sinking funds; preferred stock redemption funds; pension funds; funds for accidents, fires, and other contingencies; and funds for the replacement or expansion of plant and equipment.

A fund may be voluntarily created by management or it may be required by contract. It may arise from a single deposit or from a series of deposits, or it may be composed of the sum of the deposits plus the earnings identified with such deposits. The fund may be used for a single purpose, such as the retirement of bonds at maturity, or it may be used for several related purposes, such as the periodic payment of interest on bonds, the retirement of bonds at various intervals, and the ultimate retirement of the remaining bond issue.

When a fund is created by management, its control and disposition is an arbitrary matter depending upon the wishes of management. When a fund is created through some legal requirement, it must be administered and applied in accordance therewith. Such a fund is generally administered by one or more trustees under a trust agreement known as a *trust indenture*.

While a trustee may be in control of assets that he is ultimately to apply to the retirement of debt, such a fund should not be viewed as a reduction in debt unless it has been specifically agreed that payment to the trustee frees the transferor from any further obligation. Normally, the trustee plan is simply an arrangement for debt liquidation,

and losses from fund misappropriation or from declines in the values of fund assets do not relieve the corporation of responsibility for full payment to bondholders. Under such circumstances a fund under the control of a trustee calls for the same accounting that would be followed for a fund accumulated and controlled by its owner.

**FUND ACCUMULATION** When a corporation is required by agreement to establish a fund for a certain purpose, such as to insure payment of bonds or to redeem preferred stock, the agreement generally provides that (1) fund deposits shall be arbitrary amounts or shall vary according to profits or units of product sold, or (2) deposits shall be equal periodic sums, such deposits plus an assumed income on the fund balance to accumulate to the desired amount at some future date. The latter method is based on compound-interest factors, and compound-interest tables are used in determining the equal annual deposits. Use of such a table, for example, indicates that a fund of \$100,000, to be produced by 5 equal annual payments invested at 3% compounded annually, requires periodic deposits of \$18,835.46. A schedule can be developed to show the hypothetical fund accumulation through deposits and earnings. Such a schedule is illustrated below:

FUND ACCUMULATION SCHEDULE

YEAR	EARNINGS ON BALANCE OF FUND FOR PERIOD	AMOUNT DEPOSITED IN FUND	TOTAL INCREASE IN FUND FOR PERIOD	ACCUMULATED TOTAL ON DEPOSIT
1		\$18,835.46	\$18,835.46	\$ 18,835.46
2	\$ 565.06	18,835.46	19,400.52	38,235.98
3	1,147.08	18,835.46	19,982.54	58,218.52
4	1,746.56	18,835.46	20,582.02	78,800.54
5	2,364.02	18,835.46	21,199.48	100,000.02

Assuming deposits at the end of each year, the table shows \$18,835.46 in the fund at the end of the first year as a result of the first deposit. At the end of the second year the fund is increased by (1) earnings at 3% on the investment in the fund during the year, \$565.06, and (2) the second deposit to the fund, \$18,835.46. The total in the fund at this time is \$38,235.98. Fund earnings in the following year are based on a total investment of \$38,235.98.

Although the schedule is set up on the assumption of an annual 3% return, various factors, such as fluctuations in the earning rate and gains and losses on investments, may result in earnings that differ from the assumed amounts. If the fund is to be maintained in accordance with the accumulation schedule, deposits may be adjusted periodically to bring the fund to the required total. Annual fund income in

excess of the assumed rate will make possible a smaller deposit; annual earnings that fail to meet required amounts will call for a larger deposit.

### ACCOUNTING FOR SINKING FUNDS

Sinking fund transactions involving investments in stocks and bonds call for recording and valuation procedures as described in the preceding pages. When a fund is set up on a voluntary basis and is administered by its owner, fund transactions may be recorded currently on the company records. When fund deposits are administered by a trustee, the trustee submits periodic reports summarizing fund activities to the company. The summary of fund activities for the period can then be recorded on the company books. The trustee will have to maintain adequate records reporting fund activities in support of his reports of fund stewardship. Such records are best kept in double-entry form.

The example on page 390 illustrates the accounting that may be followed for activities of a fund where (1) information is recorded on the company's books currently and (2) information is summarized on the company's books from summaries provided by a separate set of books maintained by a fund trustee. The example assumes the establishment of a fund to be applied to the retirement of bonds and gives the entries recording the fund accumulation for the first year and the entries recording the application of the funds to the retirement of bonded indebtedness in the last year.

It should be observed that when separate books are maintained by a trustee, assets are balanced by an account with the company summarizing the trustee's accountability. This account is credited for assets received from the company as well as for the increase in assets resulting from earnings; it is charged for assets applied to the retirement of debt as well as for assets returned to the company. The sinking fund account on the company's books, in turn, reports the company's interest in sinking fund assets. This account is charged for assets transferred to the trustee and for the increase in assets resulting from fund earnings; it is credited for assets applied to the retirement of debt and for the individual assets transferred to the company by the trustee. The company account on the trustee's books and the sinking fund account on the company's books are *reciprocal accounts*, since the credit balance in the company account is equal to the debit balance in the sinking fund account when both sets of records are up to date. When a company administers a fund and desires to remove detail concerning such a fund from the general ledger, a separate ledger could be provided in a form similar to that employed by the trustee in the example.



Fund Transactions Recorded Currently on Trustee's Books			
Entry on Corporation's Books		Entry on Trustee's Books	
Bond Sinking Fund A.G.		Cash	40,000
Shaw, Trustee	40,000	The Powell Corporation	40,000
Cash	40,000		
		Investments in Bonds	35,600
		Interest Income	125
		Cash	35,725
		Cash	750
		Interest Income	750
		Expenses	200
		Cash	200
Bond Sinking Fund A.G.		Cash	40,000
Shaw, Trustee	40,000	The Powell Corporation	40,000
Cash	40,000		
		Accrued Interest Receivable	160
		Interest Income	160
		Interest Income	100
		Investments in Bonds	100
(a) Bond Sinking Fund—		Interest Income	685
A. G. Shaw, Trustee	485	Expenses	200
Sinking Fund Expenses—Fees	200	The Powell Corporation	485
Sinking Fund Income - Interest	685		
(b) Sinking Fund Income—Interest	685		
Sinking Fund Expenses—Fees	200		
Profit and Loss	485		
		Cash	1,100,000
		Investments in Bonds	1,060,000
		Interest Income	8,000
		Gain on Sale of Bonds	32,000

Transaction	Fund Transactions Recorded Currently on Company's Books	
	Entry	
Paid bonded indebtedness from sinking fund cash, \$1,000,000.	Bonds Payable	1,000,000
	Sinking Fund	
	Cash	1,000,000
Transferred sinking fund cash on hand after payment of bonds to cash account	Cash	115,000
	Sinking Fund	
	Cash	115,000
(a) To recognize sinking fund income and expense.	(b) Sinking Fund In-	
(b) To close nominal accounts relating to sinking fund activities.	come—Interest	8,000
	Gain on Sale of	
	Sinking Fund	
	Securities	32,000
	Profit and Loss	40,000

In the example, sinking fund assets as shown on the company's books or as reported to the company by the trustee are as follows at the end of 1953:

Sinking Fund Cash	\$44,825
Sinking Fund Securities	35,500
Accrued Interest on Sinking Fund Investments	160
Total	\$80,485

Sinking fund income for 1953 is \$685 and sinking fund expense is \$200; the difference, \$485, represents the net fund increase from earnings. This amount is reported on the income statement under the heading "Other Income." A gain or a loss on the sale of sinking fund securities would be recognized as an extraordinary item. The individual items comprising the sinking fund would be reported under the heading "Investments" on the balance sheet.

The foregoing illustration assumed purchase of sinking fund securities other than bonds originally issued by the company. It is common practice for a bond sinking fund to be used to purchase a company's own bonds. Furthermore, the bond indenture may specifically provide that bonds by serial lots can be called in by the trustee for redemption. Use of the sinking fund for bond purchases frequently operates to support a firm market price for the issue, since the company can enter the market whenever the market price makes retirement of the company's bonds attractive.

## Fund Transactions Recorded Currently on Trustee's Books

Entry on Corporation's Books		Entry on Trustee's Books	
Bonds Payable . . . . .	1,000,000	The Powell Corporation . . . . .	1,000,000
Bond Sinking Fund		Cash . . . . .	1,000,000
—A. G. Shaw, Trustee . . . . .	1,000,000		
Cash . . . . .	115,000	The Powell Corporation . . . . .	115,000
Bond Sinking Fund—A. G. Shaw, Trustee . . . . .	115,000	Cash . . . . .	115,000
(a) Bond Sinking Fund—A. G. Shaw, Trustee . . . . .	40,000	Interest Income . . . . .	8,000
Interest Income . . . . .	8,000	Gain on Sale of Bonds . . . . .	32,000
Gain on Sale of Bonds . . . . .	32,000	The Powell Corporation . . . . .	40,000
(b) Interest Income . . . . .	8,000		
Gain on Sale of Bonds . . . . .	32,000		
Profit and Loss . . . . .	40,000		

When a company acquires its own bonds through sinking fund cash and retires them, the account with the liability should be canceled, the sinking fund cash account should be credited, and a loss or gain on the retirement should be recorded. For example, assume that the books of a company show bonds of \$100,000 outstanding with an unamortized bond discount and expense relating to this issue of \$3,500. The company acquires and formally retires bonds with a face value of \$10,000 at a cost of \$9,800. The entry to record the bond retirement follows:

5% Bonds Payable . . . . .	10,000	
Loss on Bond Retirement . . . . .	150	
Sinking Fund Cash . . . . .		9,800
Bond Discount and Expense . . . . .		350

To record bond retirement at a loss as follows:

Amount paid on retirement . . . . .	\$9,800	
Book value of bonds retired:		
Face value . . . . .	\$10,000	
Less applicable discount and expense . . . . .	350	9,650
Loss on retirement . . . . .		\$ 150

When bonds are acquired by a trustee and kept "alive," it has sometimes been the practice to treat such an acquisition in the same manner as any other investment. The trustee records the bonds at cost, collects interest on the bonds and records collections as income,

applies accumulation and amortization procedures in calculating effective earnings, and reports a gain or a loss on the resale of bonds to outsiders. The treatment of reacquired bonds as an investment results in periodic cash transfers to the trustee representing bond interest and permits a cash accumulation in accordance with scheduled fund requirements. Interest paid by the corporation on its own bonds is balanced by interest received by the trustee. Any difference between bond payable book value and the amount paid upon reacquisition of bonds is deferred and recognized over the remaining life of the bond issue through the discount and premium amortization entries made by the corporation and the trustee on bonds issued and bonds held.

The treatment of bond reacquisition as an investment is not supportable in theory. Reacquired bonds, even though in the hands of a corporate agent, cannot be considered an asset. Such bonds are, in effect, evidence of a retirement of debt to outsiders. Such bonds may be reissued and provide funds, but this is also true of unissued bonds. Unissued bonds are not regarded as an asset; they simply represent a possible source of cash through the creation of an obligation.

The treatment of bond reacquisition as a retirement by an entry similar to that on page 393 may call for an increase in the deposit schedule to compensate for the loss of interest in the fund accumulation. The larger deposit transfers by the company are accompanied by reduced interest payments in the absence of interest accruals on bonds reacquired by the trustee. If bond reissue takes place, the sale is treated the same as sale of an original issue, any premium or discount on the reissue being identified with the remaining life of the bond lot resold. The treatment of bond reacquisitions as bond retirement should be followed even though this may call for adjustments in a plan for systematic fund accumulation.

The accounting procedures described for the bond sinking fund are applied in a similar manner in the case of the various other investment funds mentioned earlier.

#### **PREFERRED STOCK REDEMPTION FUNDS**

Funds are frequently established for the acquisition and the retirement of preferred stock outstanding. Such a retirement may be required by the terms of the issue or it may be a policy entered into voluntarily by the corporation. The preferred stock contract may indicate a stated redemption value or a scale of redemption values related to specified periods when the preferred stock may be called in for redemption.

The transfer of cash to the fund for stock redemption increases the balance in the sinking fund; the reacquisition of the company's stock

reduces this balance. The amount paid on the redemption of preferred stock may be more or less than the amount received on the original sale of the stock. The treatment of such differences requires special consideration.

*Amount Paid on Stock Redemption in Excess of Original Investment by Stockholders.* When the amount paid on stock redemption exceeds the amount originally invested, authorities are in general agreement that the amount paid in excess of the original contribution should be charged to earned surplus on the theory that the excess payment is a distribution of accrued earnings allowed in settlement of the retiring equity. To illustrate this treatment, assume that 1,000 shares of preferred stock, par \$50, were originally issued at \$51 and were reacquired at \$54. The entry to record the stock redemption is:

Preferred Stock . . . . .	50,000	
Premium on Preferred Stock . . . . .	1,000	
Earned Surplus . . . . .	3,000	
Preferred Stock Redemption Fund Cash . . . . .		54,000

*Original Investment by Stockholders in Excess of Amount Paid on Stock Redemption.* When the amount originally contributed by stockholders on the purchase of stock exceeds the amount paid on such stock redemption, it is generally agreed that such an excess should be regarded as corporate paid-in surplus; that part of the original investment retained by the corporation, then, maintains its original status as paid-in capital. For example, assume that 1,000 shares of preferred stock, par \$50, were issued for \$55 and were redeemed at \$53. The company here retains \$2,000; the source of this capital is the original investment by owners. The stock redemption may be recorded as follows:

Preferred Stock . . . . .	50,000	
Premium on Preferred Stock . . . . .	5,000	
Preferred Stock Redemption Fund Cash . . . . .		53,000
Paid-in Surplus — From Preferred Stock Redemption . . . . .		2,000

The subject of stock redemption and retirement is further discussed in Chapter 21.

**FUNDS AND RESERVES** Frequently creation of a fund is accompanied by establishment of a *fund reserve* out of earned surplus. While the two operations may be related, one should distinguish between the nature and purpose of the fund and of the fund reserve. The establishment of a fund insures the availability of assets for a named purpose; the appropriation of surplus makes a portion of past earnings temporarily unavailable as a basis for dividend declara-

tion. The latter action prevents working capital from being depleted beyond current earnings through both fund transfers and dividend payments. To illustrate, assume that earnings in a year are \$75,000, working capital and earned surplus being increased by this amount. Working capital is reduced, however, when \$50,000 is set aside in a bond sinking fund. Since working capital now reflects only a \$25,000 increase as a result of earnings, it may be desirable to show in the accounts that dividends should be limited to \$25,000. This is done by transferring \$50,000 from earned surplus to a reserve for bond sinking fund.

The following entries report the transfer of cash to the sinking fund and the earmarking of earned surplus not to be used as a basis for dividends:

Bond Sinking Fund	.....	50,000	
Cash	.....		50,000
Earned Surplus	... ..	50,000	
Reserve for Bond Sinking Fund	.....		50,000

Periodic appropriations of earned surplus and the limitation of dividends as well as fund accumulations may be required as a result of the terms of the contract with the creditor groups. On the other hand, such actions may be the result of voluntary authorizations on the part of management. The surplus reserve is reported as appropriated earned surplus in the capital section of the balance sheet. Surplus reserves are more fully considered in Chapter 23.

**MISCELLANEOUS INVESTMENTS**

An almost endless list of assets may be suggested that are of an auxiliary character so far as the main business activities are concerned and that are properly reportable under the investments heading. If such assets do not produce current interest, dividends, or other income, it is expected by the management that they will ultimately have a favorable business effect in some other way. For example, a purchase of adjoining property is made in advance of needs because it is felt that failure to make the investment currently may result in a materially higher cost for such acquisition. Or a long-term loan is made to an old customer because it is believed that the loan will carry him through a bad period and that he will continue as a profitable customer after the present strain has passed. Several of the investment items that are commonly encountered are considered in the remaining sections of this chapter.

**CASH SURRENDER  
VALUE OF LIFE  
INSURANCE**

Many business enterprises carry life insurance policies on the lives of their important executives. It is recognized that the corporation has a very definite stake in the continuing services of its officers, and the insurance plan affords a financial cushion in the event of the loss of such personnel. When insurance premiums exceed basic insurance charges, a *cash surrender value* is produced that is payable in the event of policy cancellation. If this cash surrender value belongs to the corporation, it should be reported as an investment.

The actual expense of insurance for a fiscal period is the difference between the amount of the insurance payment and the increase in the insurance cash surrender value during the period. The increase in the cash surrender value is ordinarily relatively uniform from year to year after the first year of the policy. At the end of the first year there may be no cash surrender value, or, if there is such a value, it may be quite low, because the insurance company must recover certain costs in connection with selling and recording the policy. The cost of insurance to the business, then, may be considered correspondingly high during the first year of the policy because of the starting costs involved.<sup>1</sup>

An insurance policy with a cash surrender value also has a *loan value*; this is the amount that the insurance company will permit the insured to borrow on the policy. When the insured uses the policy as a basis for a loan, the amount borrowed should be recorded as a liability and not as a reduction in the asset equity. Such loans may be liquidated by the insured by payments of principal together with a required rate of interest; or the loans may be continuing, to be applied against the insurance proceeds upon policy cancellation or ultimate settlement. The loan that an insurance company will make on a policy is limited to the policy cash surrender value at the end of the policy year less discount from the loan date to the cash surrender value date. For example, assume a cash surrender value of \$3,000 at the end of a fifth policy year. The maximum loan value on the policy at the beginning of the fifth policy year, assuming that the insurance premium for the fifth year is paid, is \$3,000 discounted for one year. If the discount rate applied by the insurance company is 5%, the policy loan value is calculated as follows:  $\$3,000 \div 1.05 = \$2,857.14$ .

<sup>1</sup>The discussion is based upon modern policy practices that recognize cash surrender values in the policy years in which they accrue. Policies written prior to 1948 frequently provided for a recognition of cash surrender values relating to the first three years of a policy only at the end of the third year. The emergence of cash surrender value in this manner would suggest either (1) the accrual of one third of such value in each of the first three years or (2) the recognition of the full amount of the cash surrender value in the third year, two thirds of such value being recorded as a special gain arising from the overstatement of expense in the first two years and one third of such value being recorded as a reduction in current insurance expense.

While it would be possible to accrue policy loan values instead of cash surrender values, practice has favored the recognition of the latter value on the books.

The insured may authorize the insurance company to apply any dividends that may be declared upon insurance policies to the reduction of the annual premium payment or to the increase in insurance cash surrender value, or he may collect such dividends in cash. Dividends should be viewed as a reduction in the cost of carrying insurance rather than as a source of supplementary income. Hence, if the company authorizes that a dividend be applied to the reduction of the annual premium, Insurance Expense is simply debited for the net amount paid. If the dividend is applied to the increase in the policy cash surrender value or if it is collected in cash, it should still be treated as an offset in the periodic expense of carrying the policy; the policy cash surrender value or Cash, then, is charged and Insurance Expense is credited. After a number of years, the periodic dividends plus increases in the cash surrender value may exceed the premium payments, thus producing a net income balance rather than an expense relating to the policy holdings.

Collection of a policy upon its surrender calls for a cancellation of any investment balance. Collection of a policy as a result of the death of the insured requires the recognition of an increase in capital represented by the difference between the insurance proceeds and the balances relating to the insurance policy. For income tax purposes no deduction may be taken by an employer for the payment of life insurance premiums on officers or employees when the taxpayer is directly or indirectly the beneficiary thereof. The amount recovered on the surrender of an insurance contract represents taxable income to the extent that this exceeds total policy payments; the policy here is viewed as an investment that has realized an amount exceeding its cost. Amounts collected on a policy by reason of the death of the insured, however, are free from income tax. The nature of the insurance policies carried and their coverage should be disclosed by appropriate comment on the accounting statements.

The entries to be made in connection with an insurance contract are illustrated in the example that follows. The Andrews Manufacturing Company insured the life of its president, W. E. Andrews, on October 1, 1950. The amount of the policy was \$50,000; the annual premiums were \$2,100. The following table gives for each of the first three years the gross premium, the dividend, the net premium, the increase in cash value, and the net cost for the year.

YEAR	GROSS PREMIUM	DIVIDEND	NET PREMIUM	INCREASE IN CASH VALUE	NET COST FOR YEAR
1	\$2,100	\$ —	\$2,100	\$ —	\$2,100
2	2,100	272	1,828	1,150	678
3	2,100	272	1,828	1,300	528

The fiscal period for the company was the calendar year. Mr. Andrews died on July 1, 1953. The entries made in recording transactions relating to the insurance contract follow:

Transaction	Entry
<b>OCTOBER 1, 1950</b> Paid first annual premium, \$2,100.	Prepaid Life Insurance Premium 2,100.00 Cash 2,100.00
<b>DECEMBER 31, 1950</b> To record expired premium for Oct. 1 Dec. 31: $\frac{1}{4} \times \$2,100$ , or \$525.	Life Insurance Expense 525.00 Prepaid Life Insurance Premium 525.00
<b>OCTOBER 1, 1951</b> Paid second annual premium, \$1,828 Premium 2,100 Less dividend credit 272  Net premium \$1,828	Prepaid Life Insurance Premium 1,828.00 Cash 1,828.00
<b>DECEMBER 31, 1951</b> To record expired premium for the year $\frac{3}{4} \times \$2,100$ (Jan. 1-Sept. 30) \$1,575 $\frac{1}{4} \times \$1,828$ (Oct. 1-Dec. 31) 457  \$2,032	Life Insurance Expense 2,032.00 Prepaid Life Insurance Premium 2,032.00
To record the increase in the cash surrender value for 1951: $\frac{1}{4} \times \$1,150$ (Oct. 1-Dec. 31), or \$287.50	Cash Surrender Value of Life Insurance Policy 287.50 Life Insurance Expense 287.50
<b>OCTOBER 1, 1952</b> Paid third annual premium, \$1,828. Premium 2,100 Less dividend credit 272  Net premium \$1,828	Prepaid Life Insurance Premium 1,828.00 Cash 1,828.00
<b>DECEMBER 31, 1952</b> To record expired premium for the year, \$1,828.	Life Insurance Expense 1,828.00 Prepaid Life Insurance Premium 1,828.00
To record the increase in the cash surrender value for 1952: $\frac{3}{4} \times \$1,150$ (Jan. 1-Sept. 30) \$ 862.50 $\frac{1}{4} \times \$1,300$ (Oct. 1-Dec. 31) 325.00  \$1,187.50	Cash Surrender Value of Life Insurance Policy 1,187.50 Life Insurance Expense 1,187.50

Transaction	Entry
<b>JULY 1, 1953</b>	
To record expired premium for Jan. 1-July 1: $\frac{1}{2} \times \$1,828$ , or \$914.	Life Insurance Expense                      914.00 Prepaid Life Insurance Premium                      914.00
To record the increase in the cash surrender value for Jan. 1-July 1, 1953: $\frac{1}{2} \times \$1,300$ , or \$650.	Cash Surrender Value of Life Insurance Policy                      650.00 Life Insurance Expense                      650.00
To record cancellation of policy upon death of insured:	Receivable from Insurance Company                      50,272.00
Amount recoverable on policy:	Cash Surrender Value of Life Insurance Policy                      2,125.00
Face of policy                      \$50,000	Prepaid Life Insurance Premium                      457.00
Dividend                      272	Gain on Settlement of Life Insurance Policy                      47,690.00
\$50,272	
Cancellation of asset values:	
Cash surrender value                      \$ 2,125	
Prepaid life insurance premium                      457	
\$ 2,582	
Gain on policy settlement                      \$47,690	

### INTERESTS IN REAL ESTATE

Improved property purchased to earn supplementary revenue and for possible price appreciation or future use is included in investments. The expenses relating to such holdings should be deducted from any revenue produced by the property. Unimproved property is frequently acquired to provide for possible future use or sale. Land, while unused, is not related to the annual income. This would suggest that any costs incident to the holding need not be deducted from current earnings but may be added to the investment in the land. When the land is used for construction purposes or is sold, its cost will include all expenditures incident to its acquisition and holding.

### ADVANCES

Advances to subsidiaries are normally considered long-term investments in the absence of definite information that amounts advanced will be collected currently. Such advances are sometimes presented as additions to the investment in stock on the balance sheet. But advances should be reported separately, since they represent claims against the subsidiary, while the investment in stock reflects an ownership equity. Advances of a long-term character to other parties are also reported in the investment classification for balance sheet purposes.

**DEPOSITS**

Deposits to guarantee contract performance, to maintain various memberships, or to secure certain privileges or services, if not to be recovered currently, are usually reported as investment items.

**INTERESTS IN PARTNERSHIPS**

Equities in partnerships should be shown as investments on the books of the individual partners. An investment account is charged for the contribution made by the partner to the partnership. This account is charged for any further investments and for any profits of the partnership increasing the partner's individual interest; it is credited for withdrawals and any losses decreasing the interest of the partner.

The reciprocal nature of the investment balance on the books of the individuals and the related interest as reported on the partnership books is illustrated in the example that follows:

Transactions	Separate Books of Partner A	Partnership Books Firm of A and B
Cash invested by partners: A                   \$20,000 B                   25,000 \$45,000	Investment in Firm of A and B      20,000 Cash                   20,000	Cash                   45,000 A, Capital           20,000 B, Capital           25,000
Cash withdrawals by part- ners for period: A                   \$ 2,500 B                   4,000 \$ 6,500	Cash                   2,500 Investment in Firm of A and B               2,500	A, Capital           2,500 B, Capital           4,000 Cash                   6,500
Profit for partnership for period, \$12,000, divided be- tween A and B in profit and loss ratio of 2:3: A, $\frac{2}{5} \times \$12,000$ \$ 4,800 B, $\frac{3}{5} \times \$12,000$ 7,200 \$12,000	Investment in Firm of A and B      4,800 Income from Part- nership               4,800	Profit and Loss                   12,000 A, Capital           4,800 B, Capital           7,200

At the end of the period, the partnership books report net assets and asset equities as follows:

Assets.....	\$50,500	A, Capital ...	\$22,300
		B, Capital	28,200
	\$50,500		\$50,500

The separate books of A follow changes in the equity of A in firm assets and report an investment balance in the partnership of \$22,300.

**INTERESTS IN TRUSTS  
AND ESTATES**

When a party acquires an interest in a trust or an estate, the equity acquired should be recorded as an investment on the books of the individual beneficiary. The account is charged for any increases in this interest resulting from gains and is credited for any decreases resulting from losses or from asset distributions made to the beneficiary. Accounting for an interest in a trust or an estate, then, is similar to that for a partnership.

**INVESTMENTS ON  
THE BALANCE SHEET**

The investment classification on the balance sheet is generally the first subdivision of the noncurrent group. Investment items should be reported individually. The investment section of a balance sheet might appear as follows:

**Investments:****Affiliated companies:**

Investment in Wilson Co., not consolidated, representing 90% interest (90,000 shares reported at cost on date of acquisition, July 1, 1950; retained earnings of subsidiary since date of acquisition have increased by \$120,000, \$108,000 being identified with parent's equity)	\$1,500,000	
Advances to Wilson Co.	115,000	\$1,615,000

Miscellaneous stock investments (reported at cost, market value \$112,000; securities have been deposited as security on bank loan — refer to notes payable, contra)		100,000
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Bond sinking fund in hands of trustee, composed of:		
Cash	\$ 15,000	
Stocks and bonds (at cost, not in excess of market value)	410,500	
Dividends and accrued interest receivable	4,500	430,000

Investment in land and unused facilities		65,000
Cash surrender value of insurance carried on officers' lives		12,500

Total investments		<u>\$2,222,500</u>
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**QUESTIONS**

1. Name at least ten items that are properly reported under the investment heading on the balance sheet.
2. Name and describe five funds that would be listed as current assets and five that would be listed as investments.
3. Give the general ledger entries that would be made for each of the transactions below, assuming that sinking fund transactions are summarized (1) in the general ledger and (2) in a separate ledger.
  - (a) Cash is transferred to the bond sinking fund.
  - (b) Sinking fund cash is invested in securities of other companies.
  - (c) Income is received on sinking fund securities.
  - (d) Sinking fund securities are sold at a profit.
  - (e) Sinking fund cash is used to redeem bonds outstanding.
  - (f) Sinking fund cash not required for bond redemption is transferred to the general cash account.

4. (a) What alternative treatments can be employed in accounting for a company's own bonds purchased from sinking fund cash and kept alive in the sinking fund? (b) Which do you favor? Why?

5. The Marshall Co. reports "Bond sinking fund, \$200,000," on its balance sheet. You find that the sinking fund consists of the following:

Marshall Co. common stock, at cost . . . . .	\$ 30,000
Stocks and bonds of other companies, at cost, which exceeds market on the balance sheet date by \$15,000 . . . . .	140,000
Cash in bank . . . . .	25,000
Dividends declared and interest accrued . . . . .	5,000

What changes in presentation should be made? Explain.

6. Upon inspecting the books of the Norman Corporation, you find two credits in Earned Surplus for 1953: Earned Surplus was credited for a \$3,000 gain arising from the retirement at \$47,000 of bonds of \$50,000 originally issued at par; Earned Surplus was also credited for a \$4,500 gain arising from the redemption at \$47,500 of 1,000 shares of preferred stock originally issued at \$52,000. What changes, if any, would you suggest?

7. (a) Distinguish between a sinking fund and a sinking fund reserve. (b) Would you normally recommend the use of the reserve in fulfilling the objectives of a fund? Explain.

8. (a) Distinguish between life insurance cash surrender value and loan value. (b) How is the loan value on a policy calculated?

9. The Melville Company collects in cash the dividends on the life insurance policies that it carries; the Nielson Company uses dividend credits to reduce the life insurance premiums that it pays; The Otto Corporation authorizes the insurance companies to apply dividend credits to the increase of policy cash surrender values. What entries will each company make in recognizing dividends?

10. Explain the accounting that is followed on an individual's books in recognizing the changes that take place in his interest in a partnership as a result of: (a) investments, (b) withdrawals, (c) profits, and (d) losses.

11. How would you recommend that advances to a subsidiary company be reported on a parent's balance sheet?

12. Indicate how each of the following should be classified in preparing a balance sheet:

- Land used as parking area for customers.
- United States Treasury Notes, to provide income for otherwise idle funds during the slack season.
- Land adjoining factory to provide for expansion program at least five years hence.
- A company's own bonds in a bond sinking fund.
- Accrued interest on above bonds.
- Advance to subsidiary company.
- Cash surrender value of insurance policy.
- A fund to be used to pay current bond interest.
- A preferred stock redemption fund.

## EXERCISES

1. Sinking fund tables show that 5 annual deposits of \$18,097.48 accruing interest at 5% compounded annually will result in a total accumulation of \$100,000 immediately after the fifth payment. Prepare a fund accumulation schedule showing the theoretical growth of the fund over the 5-year period.

2. Sinking fund tables show that 10 equal annual deposits of \$87,230.51 will produce a fund of \$1,000,000 on a 3% basis. Give the entries required for the first three deposits at the beginning of 1953, 1954, and 1955 and for the increases in the fund balance for earnings at 3% at the end of 1953, 1954, and 1955.

3. The Bronson Company has accumulated a sinking fund that shows the following balances on September 1, 1953:

Cash. . . . .	\$ 110,000	
Investments. . . . .	<u>904,000</u>	\$1,014,000

On this date securities are sold for \$926,500 plus accrued interest, \$10,250. Sinking fund cash is then applied to the payments of bonds of \$1,000,000 maturing on this date and accrued interest on the bonds of \$22,500. The balance of the sinking fund cash is transferred to the company cash account. Give the entries to record the above transactions.

4. Give the entries that would be made for each of the following bond sinking fund transactions, assuming that (1) transactions are recorded only on the books of the corporation, and (2) the transactions are recorded on self-balancing books maintained by the trustee and are summarized on the books of the corporation.

- Cash is transferred to the sinking fund trustee, \$95,000.
- Securities are purchased out of sinking fund cash, \$85,000.
- Income is collected on sinking fund securities, \$6,600.
- Expenses are paid out of sinking fund cash, \$400.
- Sinking fund securities are sold for \$91,000.
- Bonds are redeemed at maturity date out of sinking fund cash, \$100,000.
- Remaining cash in sinking fund is deposited in general cash account.
- Nominal accounts are closed.

5. On April 1, 1953, the Rodd Riggs Corporation invested plant expansion fund cash in bonds of the local municipality. The corporation paid \$9,500 for ten \$1,000, 5% bonds due in 10 years. Interest is payable semi-annually on April 1 and October 1. (a) Give all of the entries that would appear on the company's books in 1953 as a result of the investment. (b) How would the bonds appear on the corporation's balance sheet at the end of 1953?

6. Peters Sales Co. maintains a sinking fund for the retirement of bonds. Bonds of \$1,000,000, paying interest at 5% semiannually on January 1 and July 1 and maturing in 10 years, had been issued at 90 at the beginning of 1945. Cash is paid out of the sinking fund in 1953 as follows:

- March 1 — Bonds of \$20,000 were acquired at 97½ plus accrued interest.  
 October 1 — Bonds of \$5,000 were acquired at 99 plus accrued interest.

Give the entries that would be made in 1953 for bond retirements, periodic interest payments, and bond discount amortization, assuming that the entire bond issue was outstanding at the beginning of the year.

7. Biliky, Inc. maintains a sinking fund for the acquisition and the retirement of preferred stock outstanding. At the beginning of 1950, 1,000 shares of 6% preferred stock, par \$100, had been issued at 90. Fund disbursements in 1953 are as follows:

April 1 — Stock, par value \$10,000, is acquired at 88.

November 1 — Stock, par value \$5,000, is acquired at 95½.

Give the entries to record the acquisition and the retirement of preferred stock in 1953.

8. The Benjamin Corporation insures the life of its president for \$50,000. The policy is effective on January 1, 1950, and premiums are payable on the first of each year beginning on this date. The following table gives the data for the policy for the first four years:

YEAR	GROSS PREMIUM	DIVIDEND	NET PREMIUM	INCREASE IN CASH VALUE	NET COST FOR YEAR
1	\$2,000	\$—	\$2,000	\$ —	\$2,000
2	\$2,000	266	1,734	1,100	634
3	\$2,000	266	1,734	1,250	484
4	\$2,000	266	1,734	1,350	384

The fiscal period for the company is the calendar year. The Benjamin Corporation pays the insurance premiums at the beginning of 1950, 1951, 1952, and 1953. The president of the company dies on July 1, 1953, and the face value of the policy becomes recoverable as of this date. Give all of the journal entries, including the periodic adjustments, that would appear on the books of the company relative to the above data for the period 1950–1953.

9. Aaron and Burke join in a partnership in January, 1953, and agree to share profits and losses in the ratio of 5:3. Changes in their equities during 1953 are summarized below. What entries would be made on the individual books of Aaron and Burke for the following changes in their respective equities in the firm?

Jan. 15. Cash invested in the firm by Aaron and Burke was \$50,000 and \$25,000 respectively.

Mar. 10. Aaron withdrew cash of \$1,500 from the firm.

June 30. Partnership activities for the period January 15–June 30 were summarized and disclosed a net loss of \$5,000.

July 15. Burke invested additional cash of \$7,500 in the firm.

Dec. 31. Partnership activities for the period July 1–December 31 were summarized and disclosed a net profit of \$15,000.

10. In 1943 the C. E. Griff Corporation purchased for \$50,000 ten acres adjoining its manufacturing plant to provide for possible future expansion. From 1943–1953 the company paid \$20,000 in taxes and \$30,000 in special assessments. In 1953 it sold one half of its holdings for \$75,000 and erected a building at a cost of \$300,000 on the other half. The corporation shows plant at \$325,000 on its balance sheet on March 31, 1953. Journalize the necessary corrections on the books of the corporation.

## PROBLEMS

**14-1.** The *McMasters Corporation* wishes to accumulate a fund of \$100,000 over a 5-year period. Ten equal deposits are to be made at semi-annual intervals, beginning on June 30, 1953, to accumulate to the desired balance after the deposit on December 31, 1957. It is assumed that the fund will earn 5% compounded semiannually (2½% each six-month period). Sinking fund tables show that deposits of \$8,925.88 are required to provide the desired fund.

*Instructions:* (1) Prepare a table similar to that illustrated on page 388 to show the theoretical growth of the fund over the 5-year period.

(2) Give the entries to record the fund increases for deposits and for interest for the years 1953 and 1954.

**14-2.** On January 1, 1953, the books of the *Manning Corporation* show a balance in a bond sinking fund of \$203,950. Books of Joseph E. Combs, trustee in charge of the bond sinking fund for the *Manning Corporation*, show account balances as follows:

Cash	\$ 6,500	
Securities	196,300	
Accrued Interest	1,150	
The Manning Corporation		\$203,950
	\$203,950	\$203,950

The following transactions take place in 1953:

A deposit of \$40,000 was made with the trustee.

Securities were acquired at a cost of \$42,500 that included accrued interest of \$1,600.

Interest of \$10,800 was collected on interest dates on investments.

Trustee's fees and other miscellaneous expenses paid were \$850.

Sinking fund securities were sold for \$240,500 that included accrued interest of \$3,200.

Bonds of \$250,000 were retired on their maturity date and remaining cash was returned by the trustee to the corporation.

*Instructions:* (1) Give the entries required on the separate books of the trustee to record the foregoing and to close the books upon termination of the trusteeship.

(2) Give any entries that would be made on the corporation books as a result of the foregoing.

**14-3.** The *Crowell Corporation* maintains a bond redemption and interest fund. Bonds acquired by the trustee of the fund are immediately canceled. Four per cent bonds of \$1,000,000, interest payable semiannually on January 1 and July 1, were originally issued at face value. Bonds of \$250,000 were retired prior to 1953. The bond fund on January 1, 1953, has a balance of \$75,000, and transactions affecting the fund in 1953 are reported below. The trustee keeps no separate books, all sinking fund transactions being reported on the company books.

- Jan. 3. A deposit of \$50,000 is made to the bond fund.  
 Feb. 16. Bonds of \$50,000 are called at 101 plus accrued interest.  
 June 30. Interest checks for 6 months ending July 1 are mailed to bondholders.  
 July 1. A deposit of \$50,000 is made to the bond fund.  
 Oct. 1. Bonds of \$50,000 are purchased on the open market at  $99\frac{1}{2}$  plus accrued interest.  
 Nov. 1. Bonds of \$30,000 are purchased at  $99\frac{3}{4}$  plus accrued interest.  
 Dec. 31. Interest checks for 6 months ending January 1 are mailed to bondholders.  
 Dec. 31. Trustee's fees and bond fund expenses of \$3,600 for the year are paid.

*Instructions:* Journalize the foregoing transactions.

14-4. The Stoddard Co. has established a pension plan for employees. At the end of each period Pensions Expense, an expense account, is debited and Reserve for Pensions, a liability account, is credited for the estimated pension requirements. A pension fund is also maintained and is increased by semiannual deposits to the fund. Pension payments are recorded by a credit to Pension Fund and a charge to Reserve for Pensions. The balance in the account Pension Fund and changes in the fund for 1953 follow:

Fund Balance, January 1:

Cash	\$ 16,500
U. S. Treasury 3's, interest payable May 1 and November 1, due May 1, 1965 (acquired at face value)	100,000
Harmon Co. 1st Mortgage 5's, interest payable January 1 and July 1, due January 1, 1965 (face \$80,000)	82,400
Accrued Interest on U. S. Treasury 3's	500

Fund Transactions, 1953:

- Jan. 15. Cash of \$50,000 was transferred to the pension fund.  
 Feb. 7. Purchased \$50,000 of Lakewood County 3% bonds, interest payable April 1 and October 1, at  $96\frac{1}{2}$  plus accrued interest. Bonds mature on April 1, 1957.  
 April 1. Received semiannual interest on Lakewood County 3's.  
 May 2. Received semiannual interest on U. S. Treasury 3's.  
 June 30. Pension payments for 6 months were \$14,400.  
 July 1. Received semiannual interest on Harmon Co. 5's.  
 July 15. Cash of \$50,000 was transferred to pension fund.  
 Aug. 1. Purchased \$50,000 additional Lakewood County 3's, 1957 series, at  $97\frac{1}{2}$  plus accrued interest.  
 Oct. 1. Received semiannual interest on Lakewood County 3's.  
 Nov. 1. Received semiannual interest on U. S. Treasury 3's.  
 Nov. 25. Sold \$20,000 of Harmon Co. 5's for \$21,250, which includes accrued interest on the bonds to this date.  
 Dec. 31. Pension payments for 6 months were \$15,800.  
 31. The reserve for pensions was increased by \$100,000 for the year.  
 31. Received semiannual interest on Harmon Co. 5's.

*Instructions:* Give the entries required for 1953 as a result of the above, including any adjustments that would be necessary at the end of the year. (Assume that straight-line accumulation and amortization procedures are followed with respect to all bonds in the sinking fund, entries being made at the end of the year.)

**14-5.** On September 1, 1949, the Acme Company insured the life of its president, M. A. Gray, for \$50,000. The policy was dated September 1, 1949; the annual premium was \$2,400; the annual dividend after the first year was \$300. Cash surrender values on the policy were stated as follows: at end of second policy year, \$1,200; at end of third policy year, \$2,700; at end of fourth policy year, \$4,350.

The fiscal period for the company was the calendar year. Premium payments on the insurance policy were made by the company annually on September 1, 1949 through 1953. Mr. Gray died on July 1, 1953, and the face value of the policy became recoverable as of that date.

*Instructions:* Give all of the journal entries, including the periodic adjustments, that would appear on the books of the company relative to the above data for the years 1949 to 1953.

**14-6.** On March 1, 1951, Bruner & Bronson, Inc. insured the lives of its officers, V. A. Bruner and L. P. Bronson, for \$25,000 each. A policy for \$25,000 was taken out on each officer effective March 1, 1951; the annual premium on each policy was \$840; the annual dividend on each policy after the first year was \$120. Cash surrender values for each policy were stated as follows: at end of second policy year, \$420; at end of third policy year, \$960.

The fiscal period for the company was the calendar year. Premium payments on the insurance policies were made by the company annually on March 1, 1951 through 1953. Mr. Bruner died on September 1, 1953, and collection was made by the company on his policy.

*Instructions:* Give all of the journal entries, including the periodic adjustments, that would appear on the books of the company relative to the above data for the years 1951 to 1953.

**14-7.** The Diamond Coal Company issued \$50,000 worth of 4-year, first-mortgage, sinking-fund, 6% bonds dated July 1, 1949. The bonds were sold on September 1, 1949 (with accrued interest) at 103.59, a price at which they were advertised to yield 5% (semiannual coupons are payable June 30 and December 31).

The bond indenture provided (1) that 25 cents per ton mined would be deposited on June 30 of each year with the Central Trust Company for sinking-fund purposes and (2) that a sinking-fund reserve would be set aside on a straight-line basis.

The production of coal was as follows:

Year ended June 30, 1950 .. . . .	42,000 tons
Year ended June 30, 1951 .. . . .	56,000 tons
Year ended June 30, 1952 .. . . .	50,000 tons
Year ended June 30, 1953.. . . .	58,000 tons
The sinking fund earned 4% the first year and 5% thereafter.	

*Instructions:* Submit all journal entries necessary to express all these particulars, including periodic adjustments, on the books of the company. Assume that the company's fiscal period is the calendar year. (Income is not to be accrued on the sinking fund but is to be recognized only on June 30 of each year.) (A.I.A. adapted)

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## *Plant and Equipment Acquisition, Use, and Retirement*

### **NATURE OF PLANT AND EQUIPMENT**

The term "plant and equipment" is used as a classification heading for those tangible properties of a relatively permanent character that are used in the normal conduct of a business. Under the plant and equipment heading are included such items as land, buildings, machinery, tools, and office and sales equipment. The term "fixed assets" is frequently used to designate plant properties. It has already been observed, however, that this term may be used in a broader sense to apply to all noncurrent items including investments, intangibles, and deferred charges. Sometimes the term "fixed tangibles" is used to designate properties of a physical nature employed in the conduct of business and the term "fixed intangibles" to designate properties similarly employed but of a non-physical nature, such as patents, copyrights, and formulas. The tendency in present practice to classify noncurrent items under separate titles that describe the nature of the assets shown is to be encouraged. One of the noncurrent asset groups, investments, has already been considered. The plant and equipment class is considered in this and in the following two chapters. Intangibles and deferred charges are discussed in Chapter 18.

As in the case of other noncurrent assets, plant and equipment items do not tend to turn over with the speed of current assets. The number of transactions is relatively small, and the items involved in the transactions are carried over in successive balance sheets. The plant assets are acquired, used, and retired. While plant and equipment as a class remains as long as the business continues, the individual items, with the exception of land, have a limited productive or service life. The cost of plant items is assigned to operations by means of periodic depreciation charges. When an item is entirely used up, its complete cost should have been deducted from periodic revenues. If operations are to continue, a new asset is substituted for the one retired.

### **COMPOSITION OF PLANT AND EQUIPMENT**

It is customary to classify plant and equipment items in three principal groups: (1) land, (2) buildings, and (3) machinery and equipment. The first group includes building sites, parking areas, and yards. The second group includes not only buildings, but also building ap-

purtenances such as heating systems, lighting systems, and building sidewalks and driveways. Machinery and equipment, the third subdivision, includes such assets as factory machines; hand and machine tools; patterns and dies; store and office equipment; motor vehicles, vessels, and other transport equipment; and returnable containers.

**CAPITAL AND REVENUE EXPENDITURES**

The proper treatment of expenditures incident to the acquisition and the use of plant items presents important accounting problems: Expenditures relating to plant and equipment are made for their favorable effects upon operations. In recording an expenditure, it must be determined whether benefits accrue to the present period alone or whether they extend to additional future periods. If only the present period is benefited, the outlay is called a *revenue expenditure* and is recorded as a charge to expense. If benefits accrue beyond the current period, the outlay is called a *capital expenditure* and is recorded as an asset. A revenue expenditure is disposed of currently; a capital expenditure is related to the revenue of more than one period by periodic depreciation charges. An expenditure that is treated as a charge to an asset is said to be *capitalized*.

Income cannot be accurately measured unless expenditures relating to plant assets are properly identified and recorded as capital or revenue. An incorrect charge to an equipment item instead of to expense, for example, results in the current overstatement of profit on the income statement and the overstatement of assets and capital on the balance sheet. As the cost is assigned to operations in future periods, incomes of such periods will be understated; the asset and capital on the successive balance sheets will continue to be overstated, although by lesser amounts each year, until the cost is entirely written off and the original error has been fully counterbalanced. On the other hand, an incorrect charge to expense instead of to an equipment item results in the current understatement of profit on the income statement and the understatement of both assets and capital on the balance sheet. Income of subsequent fiscal periods will be overstated in the absence of appropriate charges for asset depreciation; assets and capital on the successive balance sheets will continue to be understated, although by lesser amounts each year, until the equipment item makes no further contribution to operations and the original error has been fully counterbalanced.

One frequently finds companies adopting an arbitrary practice of charging all plant expenditures of a relatively small amount, perhaps expenditures not exceeding \$50, \$75, or \$100, to expense. Such practice

is adopted for the sake of expediency; the special analysis of such small expenditures, as well as the development and the application of depreciation plans for those that might qualify as capital items, is thus avoided. Normally, adherence to such an arbitrary rule will not result in any significant misstatement of plant and equipment costs and periodic income.

#### **VALUATION OF PLANT AND EQUIPMENT**

Land that has an unlimited life is normally reported on the balance sheet at original cost. Other plant items whose lives are limited are normally shown at cost less that portion of the cost which has been allocated to past operations. The rule for valuation is frequently described as "cost less accrued depreciation." By "accrued depreciation" is meant the sum of the periodic depreciation charges since the asset was acquired. The cost of an asset less its depreciation to date is known as its *book value*. Ordinarily no reference to the market values or the replacement values of plant and equipment is made in presenting these items on the balance sheet. Plant and equipment items are not intended for conversion into cash; accounting for these assets involves the accumulation of their costs and the appropriate assignment of such costs to the revenues emerging from their use.

"Cost" of a plant item is usually interpreted to mean the minimum cash outlay necessary in its acquisition. When the plant item is acquired for consideration other than cash, it is the fair market value of the noncash consideration that determines cost: in the absence of such a measure, the fair market value of the asset acquired becomes the basis for recording its accounting value.

The cost of a plant item ordinarily includes all outlays up to the time it is usable for the purpose for which it was acquired. All costs incident to purchase, freight and cartage in, installation, etc., are added to the purchase price in obtaining the total investment in the asset.

#### **ACQUISITION OF PLANT AND EQUIPMENT**

There are a number of different ways in which plant and equipment items are acquired. These need to be considered, since each method of acquisition raises special accounting problems relating to the costs assignable to the assets. The acquisition of plant properties is discussed under the following headings:

- |  |                             |
|--|-----------------------------|
| (1) Purchase for cash.                 | (4) Issuance of securities. |
| (2) Purchase on deferred payment plan. | (5) Self-construction.      |
| (3) Exchange.                          | (6) Gift or discovery.      |

**PURCHASE FOR CASH** Plant and equipment items are frequently acquired for cash. Under such circumstances the asset is simply recorded at the amount of the cash outlay. Incidental costs relating to its purchase or additional costs relating to its preparation for use are added to such outlay. Consideration of the special costs identified with particular asset acquisitions is covered in a later section.

It was suggested in an earlier chapter that sound theory requires that all purchase discounts be regarded as reductions in purchase costs; income should emerge from the process of selling, not buying. Plant items, then, should be recorded at no more than their cash price, any available discounts being treated as reductions in asset cost. This practice should be followed even when expediency dictates the treatment of discounts taken on merchandise purchases as income. When discounts on plant and equipment items are treated as reductions in cost in accordance with theoretical considerations, failure to take such discounts should be regarded as giving rise to additional charges that may be reported in a discounts lost account.

When a lump sum is paid for a number of property items acquired in a basket purchase, the purchase price must be allocated to the individual assets. This is necessary since certain assets may be non-depreciable and others depreciable, and depreciable assets will vary as to useful life. Appraisal values, reproduction costs reduced to present depreciated values, or other available evidence is used to support an equitable allocation of the total purchase price. To illustrate such an allocation, assume that land, buildings, and equipment are acquired at a purchase price of \$80,000. It is decided to use assessed values for the individual assets as reported on the property tax bill as a basis for apportionment of the purchase price to these assets. The apportionment is summarized in the tabulation below:

	TAX ASSESS- MENT	APPORTIONMENT OF COST ON BASIS OF RELATIVE ASSESSED VALUES OF PROPERTIES	COST ASSIGNED TO INDIVIDUAL ASSETS
Real Properties:			
Land.....	\$14,000	$\frac{14,000}{50,000} \times \$80,000$	\$22,400
Improvements (Building)	30,000	$\frac{30,000}{50,000} \times \$80,000$	48,000
Personal Property (Equipment).	6,000	$\frac{6,000}{50,000} \times \$80,000$	9,600
	\$50,000		\$80,000

When a plant item is acquired in secondhand or used condition, it is generally set up at actual cost rather than at its cost to the seller less an allowance for depreciation on original cost. The useful life of such an asset is naturally less than that of a similar asset acquired new.

**PURCHASE ON  
DEFERRED PAYMENT  
PLAN**

When an asset is acquired on a deferred payment plan and interest payments are made in the liquidation of the contract, Interest Expense should be charged for the amounts paid as interest. When a contract does not provide a specific charge for interest but calls for a total charge that exceeds the price that would have to be paid on a cash basis, such excess should be regarded as the charge that is made for deferring payment. The purchase, then, is recorded by a charge to the asset at its cash price, a charge to Interest Expense for the amount considered to be a financing charge, and a credit to the payable for the full contract amount. When a cash price is not quoted, the contract price on a deferred payment plan might still be deemed to include a financing charge. In such a case the difference between the contract price and an assumed cash price, regarded as the future payments discounted at a reasonable interest rate, is treated as interest expense. Recognition of interest under such circumstances is rarely found in practice; however, special analysis and recognition of this factor would be suggested when financing charges of a material amount are implicit in the contract price.

When a plant and equipment item is acquired on a conditional sales basis in which title to the asset does not pass until payments on the contract are completed, both asset and liability balances are recognized in the accounts so long as it is the intent of the purchaser, or the lessee as this party may be designated, to complete the contract. The nature of the contract and the fact that default on the obligation will result in failure to acquire asset title should be disclosed on the balance sheet.

**ACQUISITION BY  
EXCHANGE**

*Treatment on the Books.* When an asset is acquired to replace an old asset, the old asset may be applied on the purchase price of the new. The trade-in allowance may be greater or smaller than the book value of the asset traded in; it is rarely the same. The difference between the trade-in value and the asset book value should be recorded on the books as an extraordinary profit or loss item. To illustrate, assume that at the beginning of 1953, machinery costing \$5,000 and having a book value of \$2,000

is accepted at \$1,600 in part payment on new machinery priced at \$6,000. The following entry is made:

Machinery ..	6,000	
Allowance for Depreciation of Machinery .....	3,000	
Loss on Trade of Machinery ..	400	
Machinery ..		5,000
Cash .....		4,400

The new machinery should be recorded at the price that would have to be paid in the absence of a trade-in. If the machinery in the preceding example could have been acquired at a cash price of \$5,600 instead of \$6,000, the asset should be recorded at no more than \$5,600, the trade-in value of the old machinery being recognized as actually \$1,200. The difference between the book value of the asset traded in and the trade-in allowance may be interpreted as an extraordinary loss arising from failure to recognize adequate depreciation in prior years or arising from the decision to trade the asset at this particular time. The charge is made to a nominal account if it is the practice to report extraordinary losses of this kind in the lower section of the income statement; the charge is made to Earned Surplus if it is the practice to report such items as adjustments to surplus on a surplus statement. An excess of trade-in value over book value represents a gain on the trade-in. The gain is recorded by a credit to a nominal account or to Earned Surplus.

In the preceding example, it was assumed that the asset was exchanged at the end of the fiscal period. When depreciable assets are exchanged within a fiscal period, depreciation should be recognized for the partial period from the beginning of the current period to the time of the exchange. The book value at the time of the exchange is then used in recording the exchange. For example, assume that the transaction above did not occur until the middle of 1953. The annual depreciation charge is \$1,000. Depreciation for one-half year is recorded, and this is followed by the entry to record the exchange. These entries are:

Depreciation of Machinery .....	500	
Allowance for Depreciation of Machinery .....		500
Machinery .....	6,000	
Allowance for Depreciation of Machinery .....	3,500	
Machinery .....		5,000
Cash .....		4,400
Gain on Trade of Machinery .....		100

The foregoing may be combined in the form of a single compound entry as follows:

Machinery.....	6,000	
Allowance for Depreciation of Machinery.....	3,000	
Depreciation of Machinery.....	500	
Machinery.....		5,000
Cash.....		4,400
Gain on Trade of Machinery.....		100

In the absence of adequate proof that the depreciation rate used in the previous periods was inaccurate, the rate of depreciation for the current period is the same as that used in the past.

*Income Tax Requirements.* For federal income tax purposes, a loss or a gain cannot be recognized on the exchange of business or investment property solely for property of a like kind even though the trade-in allowance differs from the book value of the asset.<sup>1</sup> The tax basis for the new asset is measured by the amount paid plus the book value of the asset traded in, the loss or the gain thus becoming an addition to or a subtraction from the price of the new asset. To illustrate, in the first example on page 414, the loss of \$400 cannot be recognized for tax purposes; instead the cost of the asset is regarded as \$6,400, composed of the cash paid, \$4,400, plus the book value or undepreciated cost of the asset traded in, \$2,000. In calculating taxable income, depreciation on the new asset is computed on the basis of \$6,400. Assuming straight-line depreciation and a 5-year life, depreciation of \$1,280 is allowed annually. The loss on the old asset is thus recovered for tax purposes in the form of additional depreciation charges over the life of the new asset.

The income tax method for reporting an asset acquired in an exchange cannot be supported in terms of accounting theory. The life cycle of an old asset has ended and the accounts should reflect the full effects of its cost, use, and disposition; a new asset has been acquired and future periods should be charged with neither more nor less than its cost. One frequently finds the tax method applied in the accounts so that analysis and restatement of account balances may be avoided in the preparation of income tax returns. When gains and losses on trade-ins are relatively insignificant, use of this method may not be objectionable. However, use of the tax method in the accounts cannot be defended when it leads to the significant misstatement of assets and periodic income.

A loss or a gain is recognized for tax purposes as well as for accounting purposes when old equipment is sold and new equipment is subsequently acquired as two independent transactions.

<sup>1</sup>This rule does not cover stock in trade or stocks, bonds, or other evidences of indebtedness or interest.

**ACQUISITION BY  
ISSUANCE OF  
SECURITIES**

A company may acquire assets by issuing its own stocks or bonds in exchange for properties. When the value of the securities is determinable, the property acquired should be reported at the current market value of the securities issued. Assets are properly valued at the par value of the securities issued only when such securities have a market value equal to par.

If stocks or bonds are selling at a discount, the assets should be reported at such current cash value, a stock discount or bond discount account being debited for the discount and Capital Stock or Bonds Payable being credited at par. For example, assume that a company's stock, par \$10, is currently selling on the market at 8½. The company gives 10,000 shares of its stock in payment for machinery. The entry to record the asset acquisition should be made as follows:

Machinery	85,000	
Discount on Common Stock	15,000	
Common Stock		100,000

If the discount were buried in the cost assigned to machinery, both assets and corporate capital would be overstated; this in turn would lead to misstatement of periodic depreciation and net income summaries during the life of the asset item.

If a company's own stocks or bonds are selling at a premium, the assets should likewise be reported at the current market value of the security, Capital Stock or Bonds Payable being credited at par and a stock premium or bond premium account being credited for the excess. It is important to note that the securities should be valued at a price that is currently prevailing and that is established by transactions on the securities markets or by transactions involving independent third parties. Amounts assigned to assets and capital must represent accurate expressions of underlying values.

When a company's securities do not have an established market value and these are exchanged for assets, it may be possible to arrive at an objective determination of the fair market value of the asset acquired through appraisal by independent authorities. Both assets acquired and securities issued may then be recorded at values arrived at by appraisal. If a satisfactory market value is obtainable neither for securities issued nor assets acquired, values as defined by the board of directors will have to be accepted for accounting purposes. For example, assume that a corporation issues 10,000 shares of stock in payment for certain mining property. The stock issued has no established market value and there are no means of arriving at a fair value for the property received. If the board of directors values the property

at \$80,000, then the property value and the issuing price of the stock are thereby set at this figure. The assignment of values by the board of directors is normally not subject to challenge, unless it can be shown that the board has acted fraudulently.

When a purchase price is made up of cash and securities, similar standards for valuing properties apply. Any security discounts or premiums should be accounted for separately. When assets are purchased for a given down payment plus a series of non-interest-bearing notes whose face values provide for the interest charges, the asset costs should not include the interest that is included in the notes.

#### **ACQUISITION BY SELF-CONSTRUCTION**

Sometimes a plant and equipment item is constructed by the party who is to make use of the asset. This may be done because it is believed that the cost will be less than if the asset is purchased. It may also be done in order that the facilities of the plant may be more fully utilized or in order that a higher quality of performance may be achieved. When such construction takes place, a number of special problems arise in arriving at a cost for the project that will become the basis for subsequent charges to operations.

*Overhead Chargeable to Self-Construction.* All construction costs are charged to the assets under construction. There is usually little or no question concerning such items as materials and labor that are directly attributable to the new construction. However, the question of inclusion of overhead in construction costs has brought forth conflicting opinions. There are some who claim that general factory overhead during a construction period should be assigned in the same manner to both construction and normal activities. Others take issue with the foregoing and suggest that only the increase in general factory overhead specifically incurred as a result of construction activities is properly chargeable to construction.

Those taking the position that construction should carry a fair share of overhead claim that this must be done if constructed assets are to be presented at their actual cost; plant and equipment items self-constructed are entitled to no special favors. This practice should be followed even though general manufacturing activities are relieved of a portion of overhead that they would normally carry; since overhead has served a wider purpose during the construction period, this is accurately reflected in below-normal factory costs. Those who support charges to construction for only the increase in general overhead claim that the cost of construction is actually only the extra costs involved in such activity. It is normal manufacturing activities that should receive

no special favors as a result of special construction. When construction is undertaken, management is presumably aware of the cost of normal activities, and the decision to engage in construction is made in terms of the special added costs involved. Construction thus should be assigned only the increased factory costs relating to such activities.

It is essential to note that the reduction of general factory overhead otherwise chargeable to factory activities by allocation to construction activities will serve to raise profits during the construction period. The recognition of a portion of overhead is postponed and recognized in subsequent periods in the form of depreciation charges.

While there is theoretical support for the use of either position suggested, practice on the whole has leaned to the assignment to construction of only the increase in general factory overhead. A major factor for this choice has been the balance sheet conservatism offered through such an approach.

*Saving or Loss on Self-Construction.* When the cost of self-construction of a plant and equipment item is less than its cost to acquire through purchase or construction by others, such difference is not a profit but a *saving*. A profit emerges from a sale, not from expenditures incurred in work done for one's self. The construction is properly reported at its cost. Savings will emerge as profits over the life of the asset as lower depreciation is charged against periodic revenue.

When the cost of constructing an asset proves to be more than the cost of such an acquisition from outsiders, it would be conservative to record the asset at the lower value and to recognize an extraordinary loss in the period of its completion. The asset thus is not reported at an amount exceeding its sound value, and future periods are not burdened with depreciation on excess costs that could have been avoided.

#### **ACQUISITION BY GIFT OR DISCOVERY**

When property is received as a gift, there is no money cost to be used as a basis for its valuation. Even though there are certain cash expenditures incident to the gift, these are generally far less than the value of the property. Cost, here, obviously fails to provide a satisfactory basis for asset accountability as well as income measurement. Under such circumstances, appraisal of the property becomes appropriate, and appraised value becomes the basis for the charge to the asset account and the credit to surplus. The surplus account should indicate the source of the capital increase. To illustrate, if the Beverly Chamber of Commerce donated land and buildings appraised at \$50,000 and \$150,000 respectively, the entry on the books of the party receiving the gift would be:

Land.....	50,000	
Buildings .....	150,000	
Paid-in Surplus—Donation of Land and Buildings		200,000

Depreciation of an asset acquired by gift should be recorded in the usual manner, the value assigned to the asset forming the basis for the depreciation charge.

If a gift is contingent upon some act to be performed by the donee, the contingent nature of the asset as well as the surplus should be indicated in the account titles. Account balances should be reported "short" on the balance sheet or should be reported in footnote form. When depreciable property is included in the gift, a periodic charge to operations for depreciation on such property would be appropriate if costs and revenues of the period are to be fully shown, even though title to the property has not passed to the donee; the service contribution may be considered as realization of a portion of the gift even though there may be ultimate title forfeiture. To illustrate, assume the following: On January 2, 1953, the property mentioned in the previous example is given on the condition that the donee employ a minimum of 100 men for a period of 10 years. Depreciation is recognized periodically on the asset, whose life is estimated at 30 years. Entries are:

Transaction	Fntry
JANUARY 2, 1953	
Receipt of property by donee.	Contingent Asset—
	Land ..... 50,000
	Contingent Asset
	Buildings ..... 150,000
	Contingent Paid-in
	Surplus —Donation
	of Land and Buildings 200,000
DECEMBER 31, 1953	
Periodic depreciation:	
(1) To record realization of property value arising from use of property for year ( $1/30 \times \$150,000$ , or \$5,000).	Buildings ..... 5,000
	Paid-in Surplus—
	Donation of Land
	and Buildings .... 5,000
(2) To cancel contingent balances for amounts realized through use.	Contingent Paid-in
	Surplus—Donation of
	Land and Buildings.. 5,000
	Contingent Asset—
	Buildings..... 5,000
(3) To record depreciation on property used during year.	Depreciation of Build-
	ings..... 5,000
	Allowance for De-
	preciation of Build-
	ings..... 5,000

Transaction	Entry
<b>JANUARY 2, 1963</b>	
Receipt of title to properties:	Land..... 50,000
(1) To record ownership of property not previously reported as realized through use (land, \$50,000, and buildings, \$150,000 less \$50,000).	Buildings..... 100,000
	Paid-in Surplus— Donation of Land and Buildings..... 150,000
(2) To cancel contingent balances relating to property not previously reported realized through use.	Contingent Paid-in Surplus—Donation of Land and Buildings. . 150,000
	Contingent Asset— Land..... 50,000
	Contingent Asset — Buildings ..... 100,000

Account balances on January 2, 1963, will show the depreciated asset values as well as the full paid-in surplus balance resulting from the contribution. Income from 1953 through 1962 is charged with depreciation applicable to the use of property items; such charges will continue to be made for the life of the donated property. Account balances on January 2, 1963, follow:

Land.....	\$ 50,000	Paid-in Surplus—	
Buildings.....	\$150,000	Donation of Land	
Less Allowance for		and Buildings.....	\$200,000
Depreciation. .	50,000		
	100,000		
	\$150,000		

Occasionally valuable natural resources are discovered on property that is owned. Oil may be discovered on a company's plant site. The presence of oil, not previously known, materially enhances the value of the property. As in the case of a gift, cost fails to provide a satisfactory basis for asset valuation and income measurement. Here, too, an appraisal of the property is appropriate, and the property is reported at a figure based upon the estimated value of the discovered resources. In this case, an appraisal is the source of the capital increase; hence appraisal surplus is credited.

#### **INTEREST DURING PERIOD OF CONSTRUCTION**

The practice has developed in public utility accounting of adding interest costs during the period of construction to assets being constructed. Instead of reporting interest as an expense during the construction period when there is no income, such interest is recognized as a cost of plant and emerges as a charge for depreciation in the periods in which the properties are income-producing. Service rates that are

established by governmental regulatory bodies are based upon current costs and thus recognize and provide for a recovery of past interest costs. Similar grounds for interest capitalization cannot be claimed in accounting for the industrial unit; nevertheless, the practice of capitalizing interest as a part of the cost of building construction has been carried over into the industrial field. When interest is capitalized, it follows that it should be adjusted for amortization of premium or discount.

**OTHER EXPENDITURES  
DURING PERIOD OF  
ORGANIZATION AND  
CONSTRUCTION**

There has been some support for the position that expenditures for interest, taxes, moving costs, general and administrative costs, etc., should be capitalized during a period of organization and construction. Such support is based on the theory that future periods are benefited by necessary initial costs and that it is unreasonable to assume that losses have been incurred before sales activities actually begin. However, it would seem that a stronger case can be made for the recognition of such items as expenses even though these give rise to a deficit. Adequate disclosure can be made of the special nature of the measurement problem during the initial period of organization by means of statement notes. If the practice of capitalizing initial costs is to be followed, such costs should be reported as a deferred charge in an appropriately titled account and then should be written off in some systematic manner. Description of the policy followed with respect to such initial costs should be provided by special note. Initial costs should under no circumstances be reported as plant and equipment. To add such costs to plant and equipment would result in a misstatement of the property items as well as of the periodic depreciation charges.

**EXPENDITURES  
INVOLVED IN USE OF  
PLANT AND  
EQUIPMENT ITEMS**

During the life of plant and equipment, expenditures relating to the use of these properties must be accounted for accurately. Property items call for regular maintenance and repairs, and at different intervals, for betterments and additions. These charges are described in the sections that follow.

*Maintenance.* Certain expenditures are incurred to maintain assets in fit condition to perform their work. Among these are expenditures for painting, lubricating, cleaning, and adjusting equipment. Such expenditures are referred to as *maintenance*. Maintenance items are recurring and benefit current operations; hence they are recognized as expenses.

*Repairs.* Expenditures are incurred to restore assets to a fit condition upon their breakdown or to restore and replace broken parts. Such outlays are referred to as *repairs*. When these expenditures are of an ordinary and recurring nature, they are considered to benefit current operations and are charged to expense. When such expenditures are of an extraordinary nature and serve to prolong the life of the asset, it may be appropriate to charge them to the allowance for depreciation and then to redetermine the depreciation policy on the asset in view of changes in its book value and estimated life.

Extraordinary repairs involving the overhauling of certain assets are frequently referred to as *renewals*. Substitutions of parts or entire units are referred to as *replacements*. A parts replacement of minor character may be regarded as ordinary repairs; a parts replacement of major importance falls in the category of extraordinary repairs; the replacement of an entire unit calls for entries for the retirement of the old asset and for the establishment of the new.

Extraordinary repairs, such as might arise because of flood, fire, or other casualty, require special analysis. In such cases, the cost of restoring the asset to its previous condition should be reported as a loss from casualties; any cost that improves or enlarges the asset should be added to the asset balance; any cost that prolongs the original life of the asset should be treated as a reduction in the allowance for depreciation account.

*Betterments.* Asset replacements providing for increased or improved services are referred to as *betterments*. Replacements of lighting systems, heating systems, sanitary systems, etc., with improved facilities represent such betterments. Betterments call for entries for the retirement of the old asset and for the establishment of the new.

*Additions.* Enlargements and extensions of existing facilities are referred to as *additions*. A new plant wing, additional loading docks, or the expansion of a paved parking lot, represent additions. An expenditure for an addition is capitalized and depreciated over its service life, which may be limited to that of the original property item to which it is related.

#### **ESTABLISHMENT OF ALLOWANCE FOR MAINTENANCE AND REPAIRS**

When certain relatively large maintenance and repair charges are expected at irregular intervals during the life of an asset, provision may be made to charge operations not only with a share of the original cost of the asset but also with a share of the

total maintenance and repair charges that are anticipated over the life of the asset. An expense account may be charged for the estimated maintenance and repairs, the depreciation allowance account or a separate maintenance and repairs allowance balance being credited. If this is done, such anticipated maintenance expenditures, when incurred, are properly chargeable against the allowance. To illustrate, the cost of repainting buildings in the month of March does not increase the original estimated service of the buildings, but it may represent a relatively heavy expense charge against the operations of March. If an allowance for maintenance and repairs has been set up by a fixed charge to monthly operations, the expenditure for repainting buildings can be charged against this allowance. Charges of this kind are thus equalized among the fiscal periods, and an unreasonably large charge against the income of a single period is avoided. If the business has numerous fixed assets of varying ages in service, however, it is not likely that the total monthly maintenance charges will vary to any great extent. Experience will indicate whether the establishment of an allowance for maintenance and repairs is warranted in spreading such charges over the accounting periods more evenly.

**PLANT AND  
EQUIPMENT  
RETIREMENTS**

Properties may be retired by trade, sale, or scrapping. Upon retirement of an asset, depreciation on the item should be recognized from the beginning of the current period to the date of retirement. Entries upon the disposition of an asset by trade were discussed previously. Upon sale or scrapping of a property item, Cash is debited for any cash proceeds, both the asset and the related depreciation allowance balances are closed, and any gain or loss arising from the asset disposition is recorded as an extraordinary item or as a charge or a credit to Earned Surplus.

To illustrate the foregoing, assume that at the beginning of September, 1953, the McCoy Corporation sells for \$750 certain machinery that it no longer needs. The asset was originally acquired in the middle of 1945 for \$5,000; depreciation was recorded on the asset at 10% per year. The entries to record the depreciation for 1953 and the sale of the property item follow:

Depreciation of Machinery.....	333.33	
Allowance for Depreciation of Machinery. ....		333.33
To record depreciation for eight months in 1953:		
$\$5,000 \times 10\% \times 8/12$ , or \$333.33.		

Cash.....	750.00		
Allowance for Depreciation of Machinery.....	4,083.33		
Loss on Sale of Machinery.....	166.67		
Machinery.....		5,000.00	
To record sale of machinery:			
Proceeds from sale .....	\$750.00		
Book value of asset:			
Cost .....	\$5,000.00		
Depreciation to date of sale:			
July 1945-Dec. 31, 1952			
(10% for 7½ years) ....	\$3,750.00		
Jan. 1, 1953-Sept. 1, 1953			
(10% for 2⅓ year) .....	333.33	4,083.33	916.67
Loss on Sale.....		\$166.67	
		- - -	

The entries above could be combined into a single entry as follows:

Cash.....	750.00		
Depreciation of Machinery .....	333.33		
Allowance for Depreciation of Machinery.....	3,750.00		
Loss on Sale of Machinery .....	166.67		
Machinery .....		5,000.00	

When a fully depreciated asset is retired with no salvage value, the depreciation allowance is simply offset against the asset account.

### **SPECIAL PROBLEMS RELATING TO ASSET ACQUISITIONS**

Special accounting problems arise in the acquisition of certain plant and equipment items. Attention is directed in the sections that follow to specific assets and the special problems relating thereto.

#### **LAND**

The cost of land includes the negotiated price at which it is acquired increased by brokers' commissions, legal fees, title and escrow fees, surveying costs, etc. Any tax or interest accruals assumed by the buyer are additions to cost.

Costs of clearing, grading, or otherwise improving the land after its acquisition should be treated as increases in the cost of land. When a site secured for a new plant is already occupied by a building that must be torn down, the cost of dismantling and removing the old structure, less any recovery from salvage, is a proper addition to land cost. If salvage exceeds the cost of razing buildings, such excess may be considered a reduction in land cost. Special assessments for certain local area improvements, such as streets, lighting, and sewage systems, may be regarded as costs augmenting the value of the land and thus chargeable to this asset. When expenditures are incurred for land improvements and these are regarded as having a limited life and requiring ultimate replacement, as, for example, sidewalks, fencing, and water

and sewage systems, such items may be summarized in an account entitled Land Improvements and may be depreciated over their estimated useful life. The estimated useful life of certain land improvements may be limited to the life of the buildings on the property; other improvements may have an independent life.

Land qualifies for presentation in the plant and equipment asset category only when it is being used in the normal activities of the business. Land held for future use, for example, should be reported under the investments heading; land held for current resale should be reported as a current asset. Parcels of land not used in normal operations should be distinguished from the land that is so used by appropriately descriptive account titles.

When land is acquired and held for future use or as a speculative venture for purposes of resale, a special problem arises as to the treatment of carrying charges on such property. Should taxes, for example, be charged to periodic revenue or should such expenditures be added to the cost of the land? There is some support for adding such costs to land cost. The buyer is aware of the fact that costs will be involved in holding the land before it is applied to the specific purpose for which it is acquired. The purchase is made with the expectation that the investment will yield benefits exceeding the original cost plus the carrying costs that may be involved. When carrying costs are capitalized, the full cost of the investment can be assigned to the purpose for which it is ultimately applied. To illustrate, assume that a company acquired land for expansion purposes in 1945, although such expansion is not expected to take place until 1955. Land cost is \$40,000; taxes and other carrying charges are estimated at \$20,000 for the ten-year period. Under these circumstances, the company has actually made a decision to invest \$60,000 in land instead of delaying action until some later date when efforts towards expansion might find circumstances less favorable. Or assume that land is acquired as a speculative investment in 1945 at \$40,000 and that it is ultimately sold in 1955 for \$75,000, carrying charges during the ten-year period having totaled \$20,000. Here, too, the investment in land may be regarded as \$60,000 and the profit as \$15,000. In effect, the land represented "goods in process" during the holding period; proceeds of \$75,000 emerged from an investment totaling \$60,000. If carrying charges were assigned to the revenue of each year, income during the ten-year holding period would have been reduced \$20,000 and a gain of \$35,000 would be reported on the ultimate sale of the property. The latter treatment fails to offer a satisfactory accounting for profits from normal activities as well as profit realized from the investment in land.

It should be pointed out that it would be difficult to support the capitalization of carrying costs in those instances where market values fail to confirm an increasing property value. Under such circumstances conservatism would require the treatment of carrying costs as charges to periodic revenues.

In practice, one frequently finds costs of carrying investments in land charged to current activities as a conservative measure. For income tax purposes, the taxpayer has the option of treating certain carrying costs such as taxes on unimproved property as deductible items or of adding these costs to the cost of such property and ultimately applying them against the proceeds from the sale of the property. When land is income-producing as a result of its use for rental purposes, for crops, etc., carrying costs should not be capitalized but should be treated as offsets against income. When land is reported as an investment on the balance sheet, it is desirable to provide data in parenthetical or note form indicating the cost procedure that is followed as well as the current market value of such property.

## **BUILDINGS**

In the acquisition of both land and buildings, the cost applicable to the purchase must be allocated between the two assets. Allocable cost consists of the purchase price plus those charges incident to the purchase, such as brokers' commissions, legal fees, and title and escrow fees. The cost allocated to buildings is increased by reconditioning and repair costs incurred in readying the buildings for use as well as costs of any building alterations, improvements, and additions.

When buildings are constructed, their cost consists of material, labor, and overhead identified with construction. Such costs as excavation charges relating to construction, architects' fees, building permits and fees, workmen's compensation and accident insurance, fire insurance, and temporary buildings used in connection with construction activities, all form a part of the total building cost. Taxes on improved property during the period of construction are capitalized. Financing costs during a period of construction are also frequently capitalized as a cost of buildings as previously explained.

It was suggested earlier that when land and buildings are acquired and buildings are immediately demolished, the cost of demolishment is added to land as a cost of preparing land for its intended use. However, the cost of demolishing buildings that have been previously occupied by the company requires different treatment. This is a cost that should be identified with the original life of the buildings. While a salvage value serves to reduce the cost arising from the use of an

asset and is frequently anticipated in developing the periodic charge for use of the asset, a retirement cost serves to increase the cost arising from asset use; the latter item is seldom anticipated, however, in developing periodic charges. When asset retirement costs have not been anticipated, they require recognition as an extraordinary item by a charge to a nominal account or to Earned Surplus.

Expenditures for the purchase and the installation of equipment items relating to buildings, such as boilers, lighting fixtures, and elevator systems, are separately recorded as Building Equipment or Building Improvements. Certain equipment items may be affixed as a permanent part of buildings; other items may be removable. Building equipment items are depreciated over the life of the buildings, except for those units that have a shorter life and will require replacement. Since building equipment items may have varying lives, detailed records must be maintained in support of the balance reported in a buildings equipment account.

#### **MACHINERY AND EQUIPMENT**

Machinery and equipment is charged for all expenditures identified with the acquisition and the preparation for use of plant machines and equipment items. Machinery and equipment cost includes the purchase price, taxes and duties on purchase, freight and drayage charges, insurance charges while in transit, installation charges, and expenditures relating to testing and final preparation of the assets for use.

#### **TOOLS**

Two classes of tools are employed in manufacturing activities: (1) machine tools representing detachable parts of a machine, such as dies, drills, and punches; and (2) hand tools such as hammers, wrenches, and screwdrivers. Both classes of tools are normally of small individual cost and relatively short-lived as a result of wear, breakage, and loss. Such factors generally suggest that these items be merged and accounted for as a single asset. In view of the impracticability or the impossibility of recognizing depreciation of tools on an individual unit basis, the following methods of accounting for this asset are found in practice:

- (1) The tools account is charged for all acquisitions and is reduced at the end of the period to a balance representing the appraised value of the tools inventory on hand.
- (2) The tools account is charged for all acquisitions and is reduced at the end of the period for the full cost of tools lost or retired during the period.
- (3) The tools account is charged for the original supply; Tools Expense is charged for all replacements; and there is no charge for tools depreciation or for tools lost or destroyed.

**PATTERNS AND DIES** The cost of patterns and dies is (1) their purchase cost or (2) the cost of labor, material, and overhead involved in their development. When patterns and dies are used in normal productive activities, their cost is reported as an asset and this asset is depreciated over its useful life. When such items are limited to use in the production of a special job order, their cost is not added to the asset balance but is recognized as a part of the cost of the special order.

**FURNITURE AND FIXTURES** In recording furniture and fixture acquisitions, a distinction needs to be made between those items to be used in sales activities and those to be used for general and administrative purposes. When acquisitions are thus classified, depreciation of furniture and fixtures can be accurately assigned to selling expense and to general and administrative expense. Sales furniture and fixtures include such items as shelving, showcases, window fixtures, and counters. General and administrative items consist of desks and chairs, safes, typewriters, calculators, etc. Furniture and fixtures are recorded at cost, which includes the purchase price, taxes, and freight charges.

**MOTOR VEHICLES** In recording the acquisition of automobiles and trucks, distinction needs to be made between those vehicles that are to be used for goods procurement, for delivery purposes, for salesmen's purposes, and for general and administrative purposes. Depreciation can then be accurately related to manufacturing, goods procurement, selling, or general and administrative activities. Automotive equipment is recorded at its purchase price, increased by any sales and excise taxes and delivery charges paid. When an amount paid for equipment includes charges for such items as current license fees, personal property taxes, and insurance, these should not be recorded as asset cost but should be recognized separately as expenses relating to the current use of the equipment.

**RETURNABLE CONTAINERS** Goods are frequently sold in containers that are to be returned by customers so that they may be reused. Returnable containers consist of such items as steel tanks, drums, barrels, bottles, and sacks. Containers are depreciable assets used in the business and qualify for inclusion in the plant and equipment asset group.

A number of special problems arise in accounting for returnable containers. A carefully designed system of control is necessary. Ordi-

narily, charges to customers' accounts are made or deposits are required for containers delivered to customers. Complete records must be maintained in terms of charges as well as the number of containers held by customers.

In establishing a system of accounting for returnable containers, the special problems that arise in each instance must be taken into consideration. Various systems are encountered in practice. An example of a system whereby containers are charged to the customers' accounts is illustrated below. Transactions relating to containers, as well as the entries to record these transactions for the Westwood Co., follow:

Transaction	Entry
Acquisition of 7,500 containers at \$1 each.	Containers 30,000 Cash 30,000
Charges to customers for 20,000 containers sent to them with goods sold during the year, billing at \$5 per container.	Accounts Receivable 100,000 Claims on Containers Outstanding 100,000
Credits to customers for 17,000 containers returned during the year at \$5 per container.	Claims on Containers Outstanding 85,000 Accounts Receivable 85,000
1,000 containers retained by customers: cost \$4, billed price — \$5.	Containers Expense 4,000 Containers 4,000 Claims on Containers Outstanding 5,000 Containers Expense 5,000
Container additions and replacements during the year, 2,500 at \$4 each.	Containers 10,000 Cash 10,000
Container loss, breakage, and depreciation for the period.	Containers Expense 6,500 Containers 6,500

In the above example the original purchase of containers and subsequent replacements are recorded by debits to the containers account. When goods are shipped in the returnable containers, the customers' accounts are charged for the containers and the account Claims on Containers Outstanding is credited. This entry is reversed when containers are returned. When a customer fails to return containers, the full amount charged to his account is collectible. Two entries, however, are required: (1) Containers Expense is debited and Containers is credited for the cost of the containers kept by the customer; (2) Claims

on *Containers Outstanding* is debited and *Containers Expense* is credited for the amount charged to the customer for containers retained. Container losses, breakage, and depreciation are recorded periodically by charges to *Containers Expense* and credits to *Containers*.

At the end of the fiscal period, the balance in the containers account reports containers on hand and in the hands of customers. This balance is reported on the balance sheet as an asset. The balance of *Claims on Containers Outstanding* shows the amount to be offset against *Accounts Receivable* as containers are returned, and hence is properly reported as a deduction from *Accounts Receivable*. *Containers Expense*, which shows the net container expense for the period, appears on the income statement as a selling expense.

In the foregoing illustration, the balance in the containers account at the end of the period is \$29,500. This balance gives effect to additions during the period, as well as to deductions resulting from the retention of containers by customers, breakage, and depreciation reported directly in the account. *Claims on Containers Outstanding* has a credit balance of \$10,000, which is the amount to be applied to *Accounts Receivable* as containers are returned. The expense for the period is \$5,500, the difference between container depreciation, breakage, and losses, \$6,500, and the net gain arising from the excess of container charges over costs when containers were retained by customers, \$1,000.

In some instances the seller requires a deposit on the transfer of returnable containers. The receipt of such a deposit is recorded by a debit to *Cash* and a credit to an account entitled *Deposits on Containers*. The return of containers by a customer calls for a return of the deposit and a reversal of the original entry. The failure by the customer to return containers will result in two entries: (1) *Containers Expense* is debited and *Containers* is credited for the cost of the containers kept by the customer; (2) *Deposits on Containers* is debited and *Containers Expense* is credited for the deposit forfeiture. The balance in the account *Deposits on Containers* shows the deposits recoverable by customers and is reported as a current liability.

#### **PLANT ASSET RECORDS**

Since accounting for plant and equipment requires information concerning individual units, it is desirable to have detailed records that may be efficiently maintained. Such records are variously termed "Unit Plant Records," "Plant Asset Records," and "Fixed Asset Control." They usually involve the controlling account principle, plant and equipment items being summarized in the general ledger and detail being recorded in

subsidiary ledger form. Subsidiary ledger records are constructed to provide the significant data for each plant and equipment unit.

Subsidiary records are commonly found in one of two forms: (1) a plant and equipment register or (2) a card or sheet file. When a plant register is used, sections are usually assigned to the assets of each department in order that depreciation charges may be accumulated departmentally. One line is provided for each asset, and columns provide space for significant information regarding the asset. The use of cards or separate sheets provides a more flexible record, since the items may be arranged in an order other than date of acquisition. One card or one sheet is provided for each item, and all information with respect to the asset is written or typed thereon or shown by means of punch holes. This information usually includes the name of the asset, location, name of vendor, insurance carried, amount paid, installation cost, freight in, estimated life, depreciation rate, periodic depreciation recorded to date, maintenance and betterment expenditures, and proceeds from final disposal.

### QUESTIONS

1. Distinguish between fixed tangibles and fixed intangibles.
2. (a) Define asset "cost." (b) How does one arrive at cost when the consideration is other than cash? (c) What is asset "book value"?
3. (a) Distinguish between a capital expenditure and a revenue expenditure. (b) Give five examples of each.
4. Which of the following items would be treated as a revenue expenditure and which as a capital expenditure:
  - (a) Cost of installing machinery.
  - (b) Cost of moving and reinstalling machinery.
  - (c) Extensive repairs as a result of fire.
  - (d) Cost of grading land.
  - (e) Insurance on machinery in transit.
  - (f) Bond discount amortization during construction period.
  - (g) Cost of major overhaul on machinery.
  - (h) New safety guards on machinery.
  - (i) Commission on purchase of real estate.
  - (j) Special tax assessment for street improvements.
5. Indicate the effects on the balance sheet and the income statement in the current year and in succeeding years of the following errors:
  - (a) The cost of a depreciable asset is incorrectly recorded as a revenue expenditure.
  - (b) A revenue expenditure is incorrectly recorded as a charge to a depreciable asset.
6. The controller for the Weston Co. insists that, since discounts received on merchandise purchases are treated as income, consistency requires that a similar practice be followed for discounts received on plant and equipment acquisitions. Evaluate this argument.

7. A number of plant and equipment items are acquired for a single lump sum. Explain how the purchase price may be allocated to the different assets acquired.

8. The Wallace Co. trades an asset for a similar new one, the trade-in value of the old asset being less than its book value. (a) What is the disposition of this difference for tax purposes? (b) Would you recommend similar treatment in the accounts? Explain.

9. The Warner Co. acquires land and buildings, issuing its own stock in exchange for such properties. How should this acquisition be valued for accounting purposes?

10. The Whitehaven Co. decides to construct a building for itself and plans to use whatever plant facilities it has to facilitate such construction. (a) What costs will enter into the cost of construction? (b) What two positions can the company take with respect to general overhead allocation during the period of construction? Evaluate each position and indicate your preference.

11. What positions can be taken with respect to interest costs during a period of plant construction? Evaluate each position and state your preference.

12. When the Bowman Corporation finds that the lowest bid it can get on the construction of an addition to its plant is \$40,000, it proceeds to erect the building with its own workmen and equipment at a cost of \$35,000. (a) How will the \$5,000 saving be treated? (b) Assuming a cost of \$45,000, how would you suggest that the excess cost be treated?

13. (a) What entry should be made upon the donation of land by a municipality to a corporation, the donation being made unconditionally? (b) What entry should be made for the donation if it is contingent upon the employment of a certain number of persons by the corporation for a 10-year period? (c) What methods may be used in reporting the donation on the balance sheet?

14. Distinguish between (a) maintenance and repairs, (b) ordinary repairs and extraordinary repairs, (c) betterments and additions.

15. What items are generally found in addition to the original purchase price in the cost of (a) land, (b) buildings, and (c) machinery and equipment?

16. Describe three methods of accounting for perishable tools.

## EXERCISES

Boyer, Inc. acquires a machine that is priced at \$1,800. Payment of this amount may be made within 60 days; a 3% discount is allowed if cash is paid at time of purchase. Give the entry to record the acquisition, assuming:

- Cash is paid at time of purchase.
- Payment is to be made at the end of 60 days.
- A deferred payment plan is agreed upon whereby a down payment of \$200 is made with 12 payments of \$150 to be made at monthly intervals thereafter.

2. The Belmont Co. on July 1, 1953, acquired plant and equipment items at a lump-sum price of \$60,000. An appraisal of the assets acquired discloses the following values:

Land. . . . .	\$15,000
Buildings . . . . .	30,000
Machinery and Equipment . . . . .	35,000

What cost would you recommend be assigned to each asset?

3. On November 1, 1953, the Parker Corporation trades machinery acquired on January 5, 1950. The machinery had a cost of \$12,000 and had been depreciated on a 10-year life. The new machinery costs \$8,000; \$5,000 is allowed on the old machinery, the balance being paid in cash. What entry is required to record the transaction? What is the value of the new machine for income tax purposes?

4. Marshall Stores acquires a delivery truck, making payment of \$1,781.46, the payment being analyzed as follows:

Price of truck . . . . .	\$2,208.00
Charges for extra equipment . . . . .	124.00
State sales tax, 3% of \$2,332.00 . . . . .	69.96
Insurance for one year . . . . .	88.00
License and tax for remainder of 1953 . . . . .	41.50
	\$2,531.46
Less trade-in allowed on old truck . . . . .	750.00
	--
Cash paid . . . . .	\$1,781.46

The old truck cost \$1,800 and had a book value of \$450 on the date of the trade. Give the entry to be made by Marshall Stores to record the exchange, assuming each of the following procedures:

- Any difference between the book value of the asset traded in and the trade-in allowance is to be recognized as an extraordinary gain or loss.
- Any difference between the book value of the asset traded in and the trade-in allowance is to be recognized as an adjustment in the basis of the new asset in accordance with income tax requirements.

5. The Boston Company acquires land for \$75,000 to be paid for by issuance of 5,000 shares of its common stock, par \$10, and cash of \$25,000. The accountant ascertains that the company's stock is selling on the market at  $6\frac{1}{2}$  when the purchase is made. What entry should be made upon acquisition of the asset?

6. The Swisher Co. enters into a contract with the Westlake Construction Co. for construction of an office building at a cost of \$425,000. Upon completion of construction, the Westlake Construction Co. agrees to accept in full payment of the contract price Swisher Co. 4% bonds with a par value of \$200,000 and common stock with a par value of \$200,000. Swisher Co. bonds are selling on the market at this time at 95. How would you recommend that the building acquisition be recorded?

7. The McCoy Corporation summarizes manufacturing and construction activities for 1953 as follows:

	ON PRODUCT MANUFACTURE	ON PLANT WING CONSTRUCTION
Materials.....	\$120,000	\$16,000
Direct Labor.....	105,000	20,000

Overhead for 1952 was 80% of the direct labor cost. Overhead in 1953 related to both product manufacture and construction activities totaled \$91,500.

- Calculate the cost of the plant addition, assuming that manufacturing activities are to be charged with overhead at the rate experienced in 1952 and that construction activities are to be charged with the excess.
- Calculate the cost of the addition if manufacturing and construction activities are to be charged with overhead at the same rate.

8. At the beginning of 1953, land valued at \$20,000 and buildings valued at \$50,000 are donated to the Walsh Corp. by a governmental unit. Buildings are estimated to have a remaining life of 20 years.

- Assuming that the gift is unconditional, what entries would appear on the books of the Walsh Corp. for the gift and for the recognition of depreciation in 1953?
- Assuming that the gift is conditional upon employment by the Walsh Corp. of 200 persons for a 5-year period, what entries would appear on the company's books for the gift and for the recognition of depreciation in 1953?
- What entries would be made when title to the gift passes to the company at the beginning of 1958?

9. Following are expenditures paid out during erection of a building: fees for search of title on land purchased, \$350; building permit, \$100; temporary quarters for construction crews, \$1,500; payment to old tenants for vacating premises, \$2,000; razing of old building, \$1,250; excavation for basement, \$5,000; taxes on land, \$2,000; dividends, \$5,000; damages awarded for injuries sustained in construction, \$3,500; interest on first mortgage bonds, \$3,000; costs of construction \$100,000; cost of paving parking lot adjoining building, \$2,500. How should each of these expenditures be treated in the accounts?

10. The Eastern Motors Corp. acquired land and old buildings at a cost of \$40,000. Delinquent taxes of \$6,000 were paid, as well as attorney's fees of \$1,500 for title search, etc., in connection with the purchase of the property. Buildings were removed at a cost of \$1,500, but \$300 was realized from the sale of salvaged materials. From January 1 to April 1 buildings were constructed at a cost of \$80,000. Buildings were occupied on April 1. Insurance on buildings taken out on January 1 was \$2,400 for a 3-year period. Real estate taxes for the calendar year were \$3,000, based

upon assessed valuation of land at \$25,000 and of buildings at \$50,000. In addition a special assessment for street improvements of \$2,500 was paid on July 1. How would land and buildings be carried on the books at the end of the year?

11. On January 2 the Pure Water Company purchases 2,000 five-gallon bottles at 75 cents each. During January customers were charged with 4,000 bottles at \$1. 3,500 bottles were returned for credit, and deposits on 50 bottles were forfeited by customers. There is no charge for depreciation, but 100 bottles were broken by employees. What entries are required to record the foregoing? What balances would appear in these accounts: Containers, Claims on Containers Outstanding, and Containers Expense? How would these balances be reported on the statements?

### PROBLEMS

15-1. An escrow statement received by A. C. Harrison Co. in connection with the purchase of land and buildings on September 15, 1953, shows the following:

#### *Charges.*

Purchase price	\$18,500.00
Real estate taxes (paid by vendor and covering tax period, September 15, 1953 June 30, 1954)	415.60
Fire insurance (paid by vendor and covering insurance period, September 15, 1953 Jan. 1, 1955)	309.00
Special assessment for street lighting (paid by vendor and covering tax period, September 15, 1953 June 30, 1954)	15.20
Termite inspection fees (1/2 of charge to be absorbed by vendee, as agreed)	65.00
	<hr/>
	\$19,304.80

#### *Credits:*

Rentals on property (retained by vendor and covering rental period, September 15 December 1, 1953)	\$ 315.00
Lease prepayment (retained by vendor and representing rental for month of December, 1954)	150.00
First mortgage note signed by vendee	8,500.00
Cash deposited by vendee in escrow	10,339.80
	<hr/>
	\$19,304.80

*Instructions:* Give the entry that would be made by the A. C. Harrison Co. to summarize the purchase of land and buildings as reported above. Assume that cost is apportioned to land and buildings in the ratio of assessed values as reported by the property tax bill, which are: land, \$3,600; improvements, \$5,650.

**15-2** The following transactions were completed by the Hancock Corp. in 1958

- Mar. 1.** Purchased land and buildings. The sum paid on the purchase was \$36,750, which included a charge of \$450 representing property taxes for March 1-June 30 that had been prepaid by the vendor. Twenty per cent of the purchase price is deemed applicable to land and the balance to buildings.
- Mar. 5-30.** Previous owners had failed to take care of normal maintenance and repairs requirements on the building during the last five years, necessitating current reconditioning at a cost of \$3,800.
- Apr. 1-May 15.** Garages in the rear of the buildings were demolished, \$300 being recovered on the lumber salvage. The company itself proceeded to construct a warehouse at a cost of \$8,500. This cost was almost exactly the same as bids made on the construction by independent contractors. Upon completion of construction, city inspectors ordered extensive modifications in the buildings as a result of failure on the part of the company to comply with the building safety code. Such modifications that could have been avoided cost an additional \$1,800.
- Nov. 5-20.** A fire of unknown origin destroyed the building show windows and entrance. The amount of the fire loss was estimated at \$3,600, which included display merchandise of \$600 and fixtures of \$400, and the full amount of the loss was recovered from the insurance company. A new entrance and windows of modern design were completed at a cost of \$6,500.
- Dec. 30-31.** The business was closed for sales purposes to permit taking the year-end inventory. During this period, required re-decorating and repairs were completed at a cost of \$275.

*Instructions:* Give journal entries to record the preceding transactions. (Disregard depreciation.)

**15-3.** On December 31, 1953, the Meadows Co. shows the following account for machinery that it had produced for its own use during 1953:

**MACHINERY (ORDER #612)**

Cost of dismantling old machine	650	Cash proceeds from sale of old machine	200
Raw materials used in construction of new machine	12,000	Depreciation for 1953, 10% of \$35,000	3,500
Labor in construction of new machine	10,200		
Cost of installation of machine	1,600		
Materials spoiled in machine trial runs	750		
Gain on construction	8,500		
Purchase of machine tools	1,500		

An analysis of the detail in the account discloses the following:

- (1) The old machine, which was removed in the installation of the new one, had been fully depreciated.
- (2) Cash discounts received on the payments for raw materials used in construction totaled \$150 and these were reported in the purchases discount account.
- (3) The factory overhead account shows a balance of \$41,600 for the year ended December 31, 1953; this balance exceeds normal overhead on regular plant activities by approximately \$3,600.
- (4) Profit and Loss was credited for the gain that was recognized on construction, the gain being measured by the difference between costs incurred and the price at which the machine could have been acquired through purchase.
- (5) Machine tools have an estimated life of 2 years; machinery has an estimated life of 10 years. The machinery was used for production beginning on September 1, 1953.

*Instructions:* (1) Set up property and valuation accounts for the machinery acquisition as they should appear at the end of 1953.

(2) Give the journal entries that are necessary in correcting the accounts in the ledger as of December 31, 1953, assuming that the accounts are still open.

**15-4.** The James Company was organized on January 1, 1953, but it did not begin manufacturing activities until buildings were completed on August 1, 1953. At the beginning of 1954, in reviewing the books and records preparatory to drawing up statements for 1953, the auditor found the following account:

LAND AND BUILDINGS			
1953		1953	
Jan. 5	Land and buildings. 108,000	Dec. 31	Depreciation for
15	Cost of removing old buildings 2,000		1953 (2%) . . . . . 5,229
26	Construction contract . . . . . 100,000		
Feb. 20	Legal fees . . . . . 6,500		
May 1	Insurance . . . . . 1,200		
Aug. 1	General and administrative expenses . . . . . 15,000		
Sept. 1	Semiannual bond interest . . . . . 2,250		
Nov. 15	County special assessment tax . . . . . 1,500		
Dec. 31	Asset write-up . . . . . 25,000		
	261,450		

An examination of the records discloses the following information relating to the land and buildings account:

- (1) On January 5, preparatory to erecting a new building, the corporation acquired land, together with an old warehouse, for \$58,000 plus 1,000 shares of the company's preferred stock. (The company was authorized to issue 10,000 shares of preferred stock, par \$50, and has received subscriptions on the balance of preferred authorized at \$42 per share.)
- (2) The old warehouse was razed at a cost of \$3,500. Proceeds from salvage, however, amounted to \$1,500.
- (3) 4½% bonds of \$100,000 were issued on March 1, and proceeds were applied in payment of construction of buildings. Interest during the construction period is to be capitalized as a part of the buildings cost.
- (4) Legal fees were incurred incident to: (a) organization of the corporation, \$4,000; (b) purchase of land, \$1,500; and (c) preparation and execution of contracts relating to construction, \$1,000.
- (5) Insurance premiums on buildings, \$1,200, represent payment for a 3-year period beginning May 1, 1953.
- (6) General and administrative expenses, January 1 to August 1, included officers' salaries, \$10,000; superintendent's salary, \$5,000. Officers were not connected with construction aside from viewing plans. The superintendent supervised construction.
- (7) The county special assessment tax represented a charge for district street improvements.
- (8) Company officials were advised by the contractor completing the construction that costs had been underestimated and that, as a consequence, he had lost money on the contract; that a fair charge for the project would have been \$125,000. As a result of this information, officials raised the carrying value of the asset and increased Earned Surplus by \$25,000.
- (9) Buildings are estimated to have a 50-year life, and 2% of the balance in the asset account was written off at the end of 1953.

*Instructions:* (1) Prepare any required correcting entries as a result of information disclosed above. (Assume that the books for 1953 have not yet been closed.)

(2) How would Land and Buildings appear on the balance sheet on December 31, 1953?

**15-5.** The records of the Barnes Manufacturing Co. on December 31, 1953, show 4,200 containers costing \$54,600 owned by the company. Claims on Containers Outstanding shows a credit balance of \$21,000; containers had been billed to customers at \$20 each. The following transactions relating to containers were completed during 1954:

- (a) Purchased 1,000 additional metal containers at \$13.
- (b) Billings to customers during the year were \$3,450,000, which included charges for containers at \$20 each amounting to \$330,000.
- (c) Cash collections from customers were \$2,890,000, which included \$24,000 for containers retained by customers. Credits were allowed for the return of 13,500 containers.
- (d) The cost of container repairs for the year was \$6,500; 200 damaged containers were scrapped.

*Instructions:* (1) Prepare journal entries to record the above transactions.

(2) Give the balances to be found in the accounts Containers, Claims on Containers Outstanding, and Containers Expense, indicating the statement and the statement section in which each account would appear.

~~15-6.~~ The books of the Allis Manufacturing Co. are audited for the first time and the following account is found for machinery during the course of the audit in 1955:

MACHINERY			
1953		1953	
Mar. 1 Machine No. 1	7,000	Dec. 31 Depreciation . .	2,000
1 Machine No. 2 .	4,500	1954	
Sept. 26 Machine No. 3	12,500	Mar. 20 Machine No. 1 . . .	2,500
1954		Nov. 1 Machine No. 2 . . .	—
Apr. 21 Machine No. 4	4,500	Dec. 31 Depreciation . . . . .	3,000
Nov. 1 Machine No. 5	6,000	31 Balance . . . . .	27,000
	34,500		<u>34,500</u>
1955			
Jan. 1 Balance . . . . .	27,000		

An examination of the books and records reveals the following additional data concerning machinery: Machines 1, 2, 3, and 4 were purchased for cash. Machines 1 and 2 proved inadequate. Machine 1 was sold for \$2,500. Machine 2 was traded for Machine 5. The purchase price of Machine 5 was \$8,200; cash of \$6,000 was paid for the new machine, an allowance of \$2,200 being received on Machine 2 turned in. All machines have an estimated life of 10 years. Depreciation of machinery was recorded on the basis of arbitrary estimates made by company engineers.

*Instructions:* (1) Give the journal entries that should have been made to record properly the above transactions. (Assume that depreciation by the straight-line method is recorded to the nearest month, and an asset acquired by trade-in is reported at its regular purchase price.)

(2) Give the journal entries necessary in 1955 to correct the accounts in view of the entries actually made in prior years.

(3) Show in account form the asset and the allowance for depreciation balances for machinery on the company's books after the corrections have been made.

15-7. The Story Co. sells its product in returnable containers. Containers cost \$2.50 and are billed to customers at \$3. During 1953, the first year of the company's operations, the company acquired 5,000 containers. During the year charges of \$24,000 were made to customers' accounts for containers. During the year customers' accounts were credited for \$18,600 as a result of container returns; customers were also credited for \$1,200, representing payments for containers that were re-

tained by customers. It is estimated on December 31 that of the containers still charged to customers, approximately 250 will not be returned. Depreciation is to be recognized on containers at 20% for the year.

*Instructions:* (1) Prepare journal entries to record the transactions and the adjustments indicated above.

(2) Give the balances that will be found in the accounts Containers, Claims on Containers Outstanding, and Containers Expense, indicating the statement and the statement section in which each account would appear.

**15-8.** The following data were ascertained in reviewing the auto trucks account for the Condon Manufacturing Company as of December 31, 1953:

Truck No. 1, purchased Jan. 1, 1947, cost .....	\$2,000
Truck No. 2, purchased July 1, 1947, cost .....	1,800
Truck No. 3, purchased Jan. 1, 1949, cost .....	1,200
Truck No. 4, purchased July 1, 1949, cost .....	1,000
Balance, January 1, 1950.....	\$6,000

The auto trucks depreciation allowance account had a balance on January 1, 1950, of \$2,440, being depreciation on the four trucks from the respective dates of purchase based on a 5-year life. No charges had been made against the allowance prior to January 1, 1950.

Transactions between January 1, 1950, and December 31, 1953, and their record in the ledger were as follows:

- July 1, 1950. Truck No. 1 was sold for \$600 cash; the entry debited Cash and credited Auto Trucks, \$600.
- Jan. 1, 1951. Truck No. 3 was traded for a larger one (No. 5), the agreed purchase price of which was \$1,600. The Condon Manufacturing Company paid the automobile dealer \$780 cash on the transaction. The entry was a debit to Auto Trucks and a credit to Cash, \$780.
- July 1, 1952. Truck No. 4 was damaged in a wreck to such an extent that it was sold as junk for \$50 cash. The Condon Manufacturing Company received \$300 from the insurance company. The entry made by the bookkeeper was a debit to Cash, \$350, and credits to Miscellaneous Income, \$50, and Auto Trucks, \$300.
- July 1, 1952. A new truck (No. 6) was acquired for \$1,200 cash and was charged at that amount to the auto trucks account.

Entries for depreciation had been made at the close of each year as follows: 1950, \$1,200; 1951, \$1,076; 1952, \$1,076; 1953, \$1,246.

*Instructions:* (1) For each of the four years calculate separately the increase or the decrease in net profits arising from the company's errors in determining or entering depreciation or in recording transactions affecting trucks, ignoring income tax regulations covering gain or loss on trade-ins.

(2) Prove your work by one compound journal entry as of December 31, 1953, to adjust the auto trucks account so that it will reflect the correct balance, assuming that the books have not been closed for 1953.

(A.I.A. adapted)

## Plant and Equipment Depreciation and Depletion

### NATURE OF DEPRECIATION

In spite of expenditures for maintenance and repairs, the time ultimately comes when all plant and equipment items other than land can no longer make a contribution to business activities and must be retired. The costs that are identified with such assets must be allocated to those periods that benefit from asset use.

The Committee on Terminology of the American Institute of Accountants defines depreciation accounting as follows:

*Depreciation accounting* is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation. *Depreciation for the year* is the portion of the total charge under such a system that is allocated to the year. Although the allocation may properly take into account occurrences during the year, it is not intended to be a measurement of the effect of all such occurrences.<sup>1</sup>

It will be noted that the term *depreciation* is used in a specialized sense in accounting. It is the process of cost allocation in recognition of the exhaustion of asset life; it is applicable only to those tangible assets that are used by the business. Depreciation is not used to imply "fall in value" as the term is popularly employed. It should not be used to designate the charge for consumption of wasting resources, which is referred to as *depletion*, or the allocation of costs arising from the use of intangibles or deferred charges, for which the term *amortization* is employed. Depreciation does not refer to a decrease in cost assigned to marketable securities resulting from market decline or to a decrease in cost assigned to inventories as a result of their obsolescence, spoilage, or other deterioration. The suggestion is frequently made that the accountant might well consider the use of some term such as "property cost allocation" in place of "depreciation" to avoid any misinterpretation of the nature of the charge implied thereby.

### CAUSES OF DEPRECIATION

Plant and equipment items have a limited useful life as a result of the operation of certain physical and functional factors. The physical factors that

<sup>1</sup>*Accounting Research Bulletin No. 22*, "Report of Committee on Terminology," May, 1944 (New York: American Institute of Accountants), p. 179. Depreciation is also considered in *Accounting Research Bulletins* Nos. 16 and 20.

move a property item towards its ultimate retirement are (1) *wear and tear*, (2) *deterioration and decay*, and (3) *damage or destruction*. Everyone is familiar with the processes of wear and tear that render an automobile, a typewriter, a chair, or a book no longer usable. The decay and the deterioration in an asset through aging is equally well known; all classes of plant and equipment are subject to physical decay in time whether used or not. Finally, fire, flood, earthquake, or accident arising from careless or improper use will reduce or terminate the life of an asset.

Plant assets are also subject to (1) *inadequacy* and (2) *obsolescence*. The latter are the functional factors that limit the life of a property item. An asset may lose its usefulness when it can no longer carry the productive load and requires replacement by another asset that can meet altered requirements. While the asset is still usable, its inadequacy for the job to be done has served to limit its useful life. A property item may lose its usefulness as a result of consumer demand for new and different products or services, or as a result of technical progress and the availability of other assets that can be more economically applied to the fulfillment of business demands. Obsolescence is the factor, here, that operates to limit the service life of the property item.

Depreciation accounting is normally viewed as calling for the recognition of both physical as well as functional factors that limit asset life. Ordinarily physical factors are the more readily apparent in predicting the useful life of an asset. However, when certain functional factors are considered to hasten the retirement of an asset, they must receive appropriate recognition in viewing its useful life. Both physical and functional factors may operate gradually or may emerge in sudden fashion. Recognition of depreciation is usually limited to the conditions that operate in gradual fashion and that are reasonably foreseeable. An accident, for example, may destroy a plant item, or a sudden change in demand may make a plant item worthless; these are unforeseeable contingencies that call for extraordinary charges in the event that they materialize.

Since the movement of an asset to ultimate exhaustion may be canceled in part or retarded through current maintenance and repairs, the policy that is to be operative with respect to these matters must be considered in appraising the useful life of the asset; low standards of maintenance and repair keep these charges at a minimum but call for the recognition of a higher-than-normal allocation for depreciation; high standards of maintenance and repairs result in higher costs, but the depreciation allocation may be reduced to a minimum amount.

Depreciation is the cost arising from the impairment of the asset that is not restored by current maintenance and repairs.

It should be emphasized that depreciation must be recognized on properties in use whether operations are profitable or not. The charge to operations for the use of properties is essential even though a rise in property replacement costs may be indicated. Costs have been incurred for benefits to be made available through the use of property items; these costs must be applied against the revenues to which they contribute in the measurement of periodic profit or loss.

**FACTORS IN ARRIVING  
AT PERIODIC COST  
ALLOCATION**

Three factors relating to the depreciable property item are considered in arriving at the periodic charge to be recognized as a result of its use. These factors are:

- (1) Asset cost.
- (2) Estimated residual value.
- (3) Estimated useful life.

*Asset Cost.* The cost of a property item includes all of the expenditures relating to its acquisition and preparation for use. Expenditures that are considered to be related to revenues of future periods and hence are capitalized and form the base for depreciation charges were considered in Chapter 15.

*Estimated Residual Value.* Certain property items may have a trade-in or scrap value when they are no longer serviceable; other items may be worthless upon their disposal. In some cases the cost of dismantling and removing assets may exceed any proceeds from salvage. From a theoretical point of view, any estimated residual value should be subtracted from cost in arriving at the depreciable cost of the asset; on the other hand, any removal costs in excess of ultimate salvage would properly be considered an addition to asset cost in arriving at the depreciable cost. One frequently finds in practice that both residual values and removal costs are ignored in the development of the depreciation charge. Disregard of these items is not objectionable when they are relatively small and not subject to precise measurement and when it is doubtful whether any accuracy will be gained through the refinement of the depreciation estimate.

*Estimated Useful Life.* The life of a property item may be expressed in terms of either an estimated time factor or an estimated use or output factor. The time factor may be a period of months or years; the use factor may be a number of hours of use or a number of units of

output. The cost of the property item flows into production in accordance with the lapse of time or in accordance with measured use. The rate of cost flow may be modified by other factors, but basically depreciation must be measured on a time basis or a use basis.

### **RECORDING DEPRECIATION**

It would be possible to charge expense and credit the property item for periodic depreciation. Such practice would be consistent with that normally employed in the recognition of periodic charges for intangibles and deferred charges. It is customary in the case of depreciable assets, however, to report the reduction in the asset in a separate valuation account. This account is frequently titled Reserve for Depreciation, although, as indicated in an earlier chapter, it might more appropriately be designated Allowance for Depreciation, Accrued Depreciation, or Depreciation Allocated to Past Operations. The reserve title has suggested to some statement readers the existence of a fund available for asset replacement; such an implication is not found in the other titles indicated. When cost allocation is reported in a separate valuation account, original cost as well as that part of the cost already assigned to activities may be reported on the balance sheet; the reader of the statement is informed concerning original cost as well as the estimated degree of utilization still recoverable from such properties. Such practice, too, serves to emphasize the estimated character of the allocation process.

A separate valuation account is maintained for each asset or class of assets that requires the use of a separate depreciation rate. When subsidiary ledger support is maintained for plant and equipment, such records normally provide for the accumulation of depreciation allocations on the individual assets. Separate charges relating to individual property items in the subsidiary plant ledger form the support for the balance reported in the general ledger account Plant and Equipment; separate credits representing individual property item cost allocations in the subsidiary plant ledger form the support for the balance reported in the general ledger account Allowance for Depreciation of Plant and Equipment. The periodic recognition of depreciation for the individual property items in the subsidiary records is accompanied by a charge to the depreciation account and a credit to the allowance for depreciation account in the general ledger. When plant and equipment items serve manufacturing, selling, and general functions, subsidiary records facilitate the assignment of depreciation to the various functions. Disposal of an asset calls for the cancellation of both asset cost and the accumulated depreciation balances.

When a certain plant item consists of several major units or structural elements with varying lives, separate recording of such different units and the recognition of depreciation in terms of the respective lives of such different units is appropriate. Retirement of shorter-lived units and their replacement by new units requires the cancellation of cost and allowance balances related to the unit disposed of and the recognition of the new unit in the accounts.

### **METHODS FOR COST ALLOCATION**

There are a number of different methods for allocating plant and equipment costs. As previously indicated, methods are based on time or use factors. Each method attempts to arrive at an equitable assignment of costs in view of the special conditions assumed. The method that is to be used in any specific instance should be selected only after a thorough study of the various factors that relate to the property item. The methods listed below are described in the following pages.

- (1) Straight-line method.
- (2) Service-hours method.
- (3) Productive-output method.
- (4) Reducing-charge methods:
  - (a) Fixed percentage applied to diminishing book value.
  - (b) Reducing fractions applied to cost.
  - (c) Arbitrary diminishing rates applied to cost.

Two other methods, the *annuity method* and the *sinking fund method*, call for the application of compound interest calculations that are beyond the scope of the present discussion. These methods are rarely encountered in practice.

The examples that follow assume the acquisition of a machine at a cost of \$10,000 with an estimated residual value at the end of its useful life of \$2,500. The following symbols are employed in the formulas for the development of depreciation rates:

- C = Asset cost.  
S = Estimated scrap or other residual value upon termination of estimated life.  
n = Estimated life in years, hours of output, or units of output.  
r = Depreciation per year, per hour of output, or per unit of output.

### **STRAIGHT-LINE METHOD**

The straight-line method of depreciation calls for the recognition of equal periodic charges over the life of the asset. The depreciation charge is not affected by asset age, performance efficiency, or degree of use. In developing the periodic charge, an estimate is required of the useful life of the asset in terms of months or years. The difference between cost and any

estimated scrap, trade-in, or other residual value is divided by such estimated life in arriving at the equal amount of cost to be assigned to each time unit.

Using data for the asset named earlier and assuming a 5-year life, annual depreciation is calculated as follows:

$$\frac{C - S}{n} = r, \text{ or } \frac{\$10,000 - \$2,500}{5} = \$1,500 \text{ per year}$$

Ordinarily depreciation is expressed as a percentage to be applied periodically to asset cost. Depreciation expressed as a percentage for the facts above would be developed as follows:

$$\frac{100\% - 25\%}{5} = 15\%$$

Fifteen per cent applied to cost annually will give a depreciation charge of \$1,500. A table to summarize the process of cost allocation for the preceding example follows:

ASSET COST ALLOCATION — STRAIGHT-LINE METHOD				
END OF YEAR	DEBIT TO DEPRECIATION	CREDIT TO ALLOWANCE FOR DEPRECIATION	BALANCE OF ALLOWANCE FOR DEPRECIATION	ASSET BOOK VALUE
				\$10,000
1	\$1,500	\$1,500	\$1,500	8,500
2	1,500	1,500	3,000	7,000
3	1,500	1,500	4,500	5,500
4	1,500	1,500	6,000	4,000
5	1,500	1,500	7,500	2,500
	\$7,500	\$7,500		

A significant change in the conditions of asset use may justify a change in the depreciation rate. For example, assume that estimates in the preceding example were based on use of the machine at the rate of 8 hours a day; after 2 years, a change in operations takes place and the machine is used for two 8-hour shifts daily. It is assumed that increased production will reduce the life of the asset by 1 year. Here accelerated depreciation should be recognized. Periodic depreciation for the remaining life of the asset would be computed as follows:

Asset cost .....	\$10,000	
Deduct:		
Residual value .....	\$2,500	
Depreciation recognized to date: 2-years @ \$1,500 ((\$7,500 ÷ 5) .....	3,000	5,500
Depreciable cost for remaining life of asset.....		\$ 4,500

Annual depreciation over remaining life of asset (\$4,500 ÷ 2) .....	\$ 2,250
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Straight-line depreciation is the method most widely used. It has the advantage of simplicity and under normal plant conditions offers a satisfactory means of cost allocation. By normal plant conditions is meant (1) a supply of properties accumulated over a period of years so that the total of depreciation plus maintenance is comparatively even, and (2) approximately equal output from year to year so that the depreciation related to each unit produced does not fluctuate materially. The absence of either of these conditions may suggest the use of one of the other methods.

In recording straight-line depreciation, it is ordinarily desirable to take an arbitrary position with respect to assets acquired and disposed of during the year. Since depreciation is at best an estimate, it is scarcely advisable to calculate it on so short a period as a day or a week. For purposes of this chapter, depreciation is recognized to the nearest month: no depreciation charge is made for use of an asset for less than one half of a month; more than one half of a month is charged as a full month. For example, if an asset is acquired on March 10, depreciation is reported for the full month of March. No charge is made for depreciation for March on an asset disposed of on March 10. In practice, depreciation to the nearest quarter, half year, or even full year may be appropriate when amounts involved are relatively small.

**SERVICE-HOURS METHOD**

The service-hours method is based on the theory that purchase of an asset is purchase of a number of hours of direct performance or service and that charges should be made for depreciation in recognition of such service hours. Instead of being estimated in terms of years or months, the life of the plant item is estimated in terms of available service hours. Depreciable cost is divided by service hours in arriving at the depreciation rate to be assigned for each hour of asset use. The use of the asset during the period is measured, and the number of hours of direct performance or service is multiplied by the depreciation rate in arriving at the depreciation charge. Depreciation charges fluctuate periodically according to the degree of contribution that the asset makes in service hours.

Using asset data previously given and an estimated service life of 60,000 hours, the rate to be applied for each service hour is calculated as follows:

$$\frac{C - S}{n} = r, \text{ or } \frac{\$10,000 - \$2,500}{60,000} = \$0.125 \text{ per hour}$$

Allocation of asset cost in terms of service hours is summarized in the table below:

ASSET COST ALLOCATION			SERVICE-HOURS METHOD			
END OF YEAR	SERVICE HOURS	DEBIT TO DEPRECIATION		CREDIT TO ALLOW- ANCE FOR DEPRE- CIATION	BALANCE OF ALLOW- ANCE FOR DEPRE- CIATION	ASSET BOOK VALUE
						\$10,000
1	10,000	(10,000 × \$.125)	\$1,250	\$1,250	\$1,250	8,750
2	15,000	(15,000 × \$.125)	1,875	1,875	*3,125	6,875
3	20,000	(20,000 × \$.125)	2,500	2,500	5,625	4,375
4	10,000	(10,000 × \$.125)	1,250	1,250	6,875	3,125
5	5,000	( 5,000 × \$.125)	625	625	7,500	2,500
	60,000		\$7,500	\$7,500		

It is assumed above that the original estimate of service is confirmed in use, and that the asset is retired after 60,000 hours which is reached in the fifth year.

It should be observed that straight-line depreciation resulted in an annual charge of \$1,500 regardless of fluctuations in productive activity. When assets are considered to wear out as a result of direct performance or use and when there are significant fluctuations in such use in successive periods, the service-hours method, which recognizes "used" hours instead of "owned" hours normally provides the more equitable charge to operations.

### PRODUCTIVE-OUTPUT METHOD

The productive-output method is based on the theory that an asset is acquired for production and that charges should be made for depreciation in recognition of the unit output. This method requires an estimate of the total productive output of the property item. Depreciable cost divided by the estimated output gives the equal depreciation charge to be assigned for each unit of output. The measured production for a period multiplied by the depreciation charge per unit gives the charge to be made for depreciation. Depreciation charges fluctuate periodically according to the degree of contribution that the asset makes to production output.

Using the previous asset data and an estimated productive life of 800,000 units, the rate to be applied for each unit produced is calculated as follows:

$$C - S = r, \text{ or } \frac{\$10,000 - \$2,500}{800,000} = \$0.009375 \text{ per unit (or } \$9.375 \text{ per thousand)}$$

Cost allocation in terms of units produced is summarized in the tabulation below:

ASSET COST ALLOCATION				PRODUCTIVE-OUTPUT METHOD		
END OF YEAR	UNIT OUTPUT	DEBIT TO DEPRECIATION		CREDIT TO ALLOW- ANCE FOR DEPRE- CIATION	BALANCE OF ALLOW- ANCE FOR DEPRE- CIATION	ASSET BOOK VALUE
						\$10,000.00
1	100,000	(100 × \$9.375)	\$ 937.50	\$ 937.50	\$ 937.50	9,062.50
2	200,000	(200 × \$9.375)	1,875.00	1,875.00	2,812.50	7,187.50
3	350,000	(350 × \$9.375)	3,281.25	3,281.25	6,093.75	3,906.25
4	100,000	(100 × \$9.375)	937.50	937.50	7,031.25	2,968.75
5	50,000	( 50 × \$9.375)	468.75	468.75	7,500.00	2,500.00
	800,000		\$7,500.00	\$7,500.00		

It should be observed that it is frequently difficult to estimate asset performance in terms of either service hours or productive output. Furthermore, measurement solely in terms of use fails to recognize special conditions that may be operative, such as increasing maintenance and repair costs, as well as possible inadequacy and obsolescence factors.

Neither the service-hours method nor the productive-output method requires a revision in the depreciation rate with a change in the conditions of use as in the case of straight-line depreciation. A change to multishift operations, for example, results in an automatic acceleration of depreciation charges.

### REDUCING-CHARGE METHODS

Reducing-charge methods provide for highest depreciation charges during the earliest years of asset use and steadily declining depreciation charges in later years. Such plans are based on the theory that the sum of depreciation and maintenance costs involved in the use of a property item should be relatively even from year to year. Over the life of the asset, therefore, depreciation charges should go down as maintenance costs rise. Three methods that provide for reducing charges for depreciation over the life of the asset are described here: (1) fixed percentage applied to diminishing book value, (2) reducing fractions applied to cost, and (3) arbitrary diminishing rates applied to cost.

*Fixed Percentage Applied to Diminishing Book Value.* Decreasing depreciation charges are provided by applying a fixed percentage to the diminishing asset book value. The percentage to be applied to the diminishing book value that will produce the estimated residual value at the end of the useful life of the asset is calculated by the following formula:

$$1 - \sqrt[n]{S \div C} = r$$

Using the previous asset data and assuming a 5-year asset life, the depreciation rate is calculated as follows:

$$1 - \sqrt[5]{2,500 \div 10,000} = 1 - \sqrt[5]{.25} = 1 - .757858 = .242142, \text{ or } 24.2142\%$$

Dividing the estimated residual value by cost in the formula above gives .25, the percentage that the residual value at the end of 5 years should bear to the principal amount. The fifth root of this percentage is calculated at .757858. Multiplying a principal amount and successive diminishing amounts by .757858 five times will reduce such principal to .25 of its original balance. The difference between 1 and .757858, or .242142, then, is the rate of decrease to be applied to a principal value and successive diminishing values in bringing such principal to .25 of its original balance. A residual value is required in the use of the above formula. In the absence of an expected residual value, a nominal amount of \$1 can be employed for purposes of the formula.

Depreciation calculated by application of the 24.2142% rate to diminishing book value is summarized in the table below:

ASSET COST ALLOCATION		FIXED PERCENTAGE APPLIED TO DIMINISHING BOOK VALUE			
END OF YEAR	DEBIT TO DEPRECIATION		CREDIT TO ALLOW- ANCE FOR DEPRE- CIATION	BALANCE OF ALLOW- ANCE FOR DEPRE- CIATION	ASSET BOOK VALUE
					\$10,000.00
1	(24.2142% of \$10,000.00)	\$2,421.42	\$2,421.42	\$2,421.42	7,578.58
2	(24.2142% of \$ 7,578.58)	1,835.09	1,835.09	4,256.51	5,743.49
3	(24.2142% of \$ 5,743.49)	1,390.74	1,390.74	5,647.25	4,352.75
4	(24.2142% of \$ 4,352.75)	1,053.98	1,053.98	6,701.23	3,298.77
5	(24.2142% of \$ 3,298.77)	798.77	798.77	7,500.00	2,500.00
		<u>\$7,500.00</u>	<u>\$7,500.00</u>		

Instead of developing a rate that is refined to produce a residual value of exactly \$2,500, it will usually prove more convenient to ap-

proximate a rate that will provide a satisfactory plan for cost allocation; since depreciation involves estimates, there is little assurance that rate refinement will produce more accurate results. In the previous example, for instance, a depreciation rate of 25% provides a more convenient basis for depreciation than the use of 24.2142%; differences resulting from the use of the 25% are not material. Application of the 25% rate is summarized below:

END OF YEAR		DEBIT TO DEPRECIATION	CREDIT TO ALLOWANCE FOR DE- PRECIATION	BALANCE OF ALLOWANCE FOR DE- PRECIATION	ASSET BOOK VALUE
					\$10,000.00
1	(25% of \$10,000.00)	\$2,500.00	\$2,500.00	\$2,500.00	7,500.00
2	(25% of \$ 7,500.00)	1,875.00	1,875.00	4,375.00	5,625.00
3	(25% of \$ 5,625.00)	1,406.25	1,406.25	5,781.25	4,218.75
4	(25% of \$ 4,218.75)	1,054.69	1,054.69	6,835.94	3,164.06
5	(25% of \$ 3,164.06)	791.02	791.02	7,626.96	2,373.04
		\$7,626.96	\$7,626.96		

*Reducing Fractions Applied to Cost.* The reducing-fraction approach provides for the application of a series of fractions, each of a smaller value, to original asset cost over the lifetime of the asset. Fractions may be developed in terms of the sum of the asset life periods. This method is referred to as the *sum of life digits method*. Assuming the asset previously described and an estimated 5-year life, periodic charges are developed as follows by the sum of life digits method:

	REDUCING WEIGHTS	REDUCING FRACTIONS
First Year	5	5/15
Second Year	4	4/15
Third Year	3	3/15
Fourth Year	2	2/15
Fifth Year	1	1/15
	15	15/15

Weights for purposes of developing reducing-fractions are the years' digits listed in inverse order. The fraction denominator is obtained by adding these weights; the numerator is the weight assigned to the specific year. Depreciation calculated by application of the reducing fractions above to depreciable cost is summarized in the table that follows:

ASSET COST ALLOCATION — SUM OF LIFE DIGITS					
END OF YEAR	DEBIT TO DEPRECIATION	CREDIT TO ALLOWANCE FOR DE- PRECIATION	BALANCE OF ALLOWANCE FOR DE- PRECIATION	ASSET BOOK VALUE	
					\$10,000
1	(5/15 × \$7,500)	\$2,500	\$2,500	\$2,500	7,500
2	(4/15 × \$7,500)	2,000	2,000	4,500	5,500
3	(3/15 × \$7,500)	1,500	1,500	6,000	4,000
4	(2/15 × \$7,500)	1,000	1,000	7,000	3,000
5	(1/15 × \$7,500)	500	500	7,500	2,500
	\$7,500	\$7,500			

If it is felt that the sum of the years' digits calculation results in excessive variations between early and late years, smaller variations may be achieved by raising the weight assigned to the last year and adjusting the remaining weights correspondingly. For example, allowing a weight of 10 for the fifth year and raising successive weights by 1, reducing fractions and periodic charges may be developed as follows:

	REDUCING WEIGHTS	REDUCING FRACTIONS APPLIED TO DEPRECIABLE COST	PERIODIC DEPRECIATION
First Year	14	14/60 × \$7,500	\$1,750
Second Year	13	13/60 × \$7,500	1,625
Third Year	12	12/60 × \$7,500	1,500
Fourth Year	11	11/60 × \$7,500	1,375
Fifth Year	10	10/60 × \$7,500	1,250
	60	60/60	\$7,500

*Arbitrary Diminishing Rates Applied to Cost.* Arbitrary diminishing rates may be developed by analyses of expected performance of the asset and the changes in maintenance and repair costs that are anticipated over the life of the asset. Assuming arbitrary diminishing rates for a 5-year period of 20%, 15%, 15%, 15%, and 10% on the asset previously mentioned, cost allocation may be summarized as shown at the top of the opposite page.

*Evaluation of Reducing-Charge Methods.* When the use of a property item calls for increased maintenance and repair costs periodically, a reducing-charge method makes possible an equitable assignment of the combined costs of depreciation and maintenance to periodic operations. For example, assume that maintenance and repair costs on the asset previously described are expected to be \$500 the first year and

**ASSET COST ALLOCATION — ARBITRARY DIMINISHING RATES**

END OF YEAR	DEBIT TO DEPRECIATION	APPLIED TO COST		BALANCE OF ALLOWANCE FOR DE- PRECIATION	ASSET BOOK VALUE
			CREDIT TO ALLOWANCE FOR DE- PRECIATION		
					\$10,000
1	(20% of \$10,000)	\$2,000	\$2,000	\$2,000	8,000
2	(15% of \$10,000)	1,500	1,500	3,500	6,500
3	(15% of \$10,000)	1,500	1,500	5,000	5,000
4	(15% of \$10,000)	1,500	1,500	6,500	3,500
5	(10% of \$10,000)	1,000	1,000	7,500	2,500
		\$7,500	\$7,500		

to rise by approximately \$125 a year thereafter. Use of the reducing-charge method illustrated on page 452 is compared with the straight-line method in the tabulation below:

YEAR	DEPRECIATION CHARGE		ESTIMATED MAIN- TENANCE AND REPAIRS	SUM OF DEPRECIATION AND MAINTENANCE AND REPAIRS	
	STRAIGHT- LINE	REDUCING- FRACTION		STRAIGHT- LINE DEPRECIATION	REDUCING- FRACTION DEPRECIATION
1	\$1,500	\$1,750	\$ 500	\$ 2,000	\$ 2,250
2	1,500	1,625	625	2,125	2,250
3	1,500	1,500	750	2,250	2,250
4	1,500	1,375	875	2,375	2,250
5	1,500	1,250	1,000	2,500	2,250
	\$7,500	\$7,500	\$3,750	\$11,250	\$11,250

The reducing-fraction method above provides equal combined charges periodically, while straight-line depreciation results in higher combined costs as the asset grows older. The illustration assumes a regular increase in maintenance and repairs. Obviously such regularity would not be achieved in practice; hence a reducing-charge method will not provide the uniformity reported above. However, when it is known that maintenance and repairs will show a regular increase in successive years, use of a reducing-charge method will tend to equalize periodic charges entailed in the use of the asset.

Two other factors may suggest use of a reducing-charge method for asset depreciation: (1) The anticipation that there will be a reduction of asset efficiency or asset output as the asset becomes older and worn offers support for the recognition of decreasing depreciation charges. (2) The possibility that inadequacy or obsolescence may

result in premature retirement of the asset offers support for a reducing-charge method that results in reductions in asset book value more nearly in agreement with the decreases taking place in the market, sales, or trade-in value of the asset; in the event of premature asset retirement, depreciation charges absorb what will otherwise require recognition as an extraordinary loss. Reducing-charge methods are supported as conservative approaches to the cost allotment problem.

### COMPOSITE DEPRECIATION

In the previous discussion it was assumed that depreciation is calculated on each individual plant item. There has been no suggestion of averaging the rates and applying a single rate to the total of the plant account or to all departmental properties. The application of a single rate is called the *composite method* or *blanket-rate method*.

The composite rate is generally set by estimate or by an analysis of the various assets or classes of assets in use. The development of a composite rate based upon an analysis of assets used by a department is illustrated in the example that follows:

ASSETS	COST	RESIDUAL VALUE	DEPRECIABLE COST	ESTIMATED LIFE IN YEARS	ANNUAL DEPRECIATION
A	\$ 2,500	\$ 100	\$ 2,400	4	\$ 600
B	6,000	400	5,600	5	1,120
C	10,000	500	9,500	10	950
	<u>\$18,500</u>	<u>\$1,000</u>	<u>\$17,500</u>		<u>\$2,670</u>

Composite depreciation rate applied to cost:  $\$2,670 \div \$18,500 = 14.43\%$ .  
 Composite life of departmental assets:  $\$17,500 \div \$2,670 = 6.55$  years.

It will be observed that a rate of 14.43% applied to the cost of the assets, \$18,500, results in annual depreciation of \$2,670. Annual depreciation charges of \$2,670 reach the total depreciable cost of \$17,500 in 6.55 years; hence 6.55 years may be considered to be the composite or average life of the departmental assets.

After a composite rate has been set, it is ordinarily continued in the absence of significant changes in the lives of assets or asset additions and retirements that have a material effect upon the rate. It is assumed in the example above that assets A and B are replaced with similar assets at the end of 4 and 5 years respectively. If the assets are not replaced, obviously a continuation of the depreciation rate of 14.43% will result in overstatements of depreciation charges. Upon individual asset retirement, the asset account is closed and that portion of the valuation account balance that relates to the asset retired is canceled.

The composite rate method saves time in obtaining the periodic depreciation charge, since only one multiplication of rate times amount is necessary in place of individual calculations for each property item. However, the averaging procedure is not recommended, since the accuracy that is possible by use of the other methods is not available when a single rate is applied to the mass or aggregate.

**RETIREMENT,  
REPLACEMENT,  
APPRAISAL SYSTEMS**

The charge to operations for plant and equipment use may be made on a basis other than cost allocation. Other systems that are sometimes used in establishing such charges are mentioned below:

*Retirement Systems.* Asset accounts are charged for all asset acquisitions; at the end of the period, assets are credited for the full cost of those assets retired within the period and expense is charged for this amount.

*Replacement Systems.* Asset accounts are charged for original asset acquisitions; charges to expense are recognized in the future for expenditures for assets that are required to replace the original supply.

*Appraisal Systems.* Asset accounts are charged for all asset acquisitions; assets are appraised periodically and the asset balances are reduced to the appraisal values, such reduction being recognized as a charge to operations.

Systems such as the foregoing can be considered acceptable only when the use of standard depreciation accounting would involve certain practical difficulties. The use of the above systems was suggested in the previous chapter for the ownership of tools of relatively small cost and large number. These systems would likewise be applicable in such instances as accounting for poles and related equipment for an electric utility, railroad ties in the case of a railway, dishes and silverware in the case of a restaurant, etc.

**DEPRECIATION  
ACCOUNTING AND  
PROPERTY  
REPLACEMENT**

There has been a tendency on the part of many readers of financial statements to interpret depreciation accounting as somehow related to the accumulation of funds for asset replacement. The use of such terms as "provision for depreciation" on the income statement and "reserve for depreciation" on the balance sheet have contributed to such opinion.

It has been pointed out that the charge for depreciation originates from the recognition of the movement of a property item towards

ultimate exhaustion; the nature of this charge is no different from those that are made to recognize the expiration of insurance premiums or the expiration of patent rights. It is true that revenue equal to or in excess of expenses for a period results in a recovery of such expenses; salary expense is thus recovered by revenue, as is insurance expense, patent amortization, and charges for depreciation. This does not suggest, however, that cash equivalent to the recorded depreciation will be available to meet the cost of property item replacement. Revenue resources may be applied to many uses: to the increase in cash, inventories, or other working capital items; to the acquisition of plant or other noncurrent items; or to the retirement of debt. The *statement of application of funds*, which is described in a later chapter, traces the employment of resources made available by operations reflected on the income statement. If a cash fund is to be available for the replacement of property items, this would call for special action - the transfer of cash to the particular fund. Depreciation accounting should not be regarded as serving such a function.

## DEPLETION

Natural resources, also called *wasting assets*, move towards exhaustion as the physical units that comprise such resources are removed and sold. The withdrawal of oil or gas, the cutting of timber, and the mining of coal, sulphur, iron, copper, or silver ore are examples of processes leading to the exhaustion of natural resources. The reduction in the cost or value of natural resources as a result of the withdrawal of such resources is referred to as *depletion*.

Depletion may be distinguished from depreciation in the following respects:

- (1) Depletion is recognition of the quantitative exhaustion taking place in the case of a natural resource, while depreciation is recognition of the service exhaustion taking place in a plant and equipment item.
- (2) Depletion involves a distinctive asset that cannot be directly replaced in kind upon its exhaustion; depreciation involves assets that are generally replaced upon their exhaustion.
- (3) Depletion is recognition of the direct conversion of a natural resource into a commodity that is to be sold; depreciation is an allocation of a cost to current revenue for a service function except for those instances when assets are used in manufacturing activities and such allocation is a charge related to the conversion of raw material into finished goods that is reflected ultimately as a cost of the finished product.

The measurement of profit calls for the recognition of depletion. If the natural resource is sold directly upon its emergence or withdrawal, the recognition of depletion is, in effect, the recognition of a cost of goods sold; if the natural resource is removed and processed and stored before sale, the depletion cost becomes a cost of inventories until it emerges as a cost of goods sold. In either case, a matching of revenue and the depletion related to the realization of such revenue is necessary in the development of periodic net income.

**RECORDING  
DEPLETION**

Three factors are considered in arriving at the charge to be made for depletion:

- (1) Property cost, including all developmental costs identified with preparation of the property for exploitation.
- (2) Estimated residual value of property upon exhaustion of natural resources.
- (3) Estimated supply of units that may be profitably removed from such property.

Cost of the property less the estimated residual value gives the total amount to be recognized as depletion. This value divided by the estimated unit output gives the charge for depletion for each unit removed from the property. The charge that is made for depletion for the period is the measured number of units removed during the period multiplied by the depletion rate per unit. To illustrate such calculation, assume the following facts: land containing natural resources is purchased at a cost of \$110,000; the land value after resource exploitation is estimated at \$10,000; the natural resource supply is estimated at 1,000,000 units. The depletion rate and the depletion charge for the first year, assuming the withdrawal of 80,000 units, are calculated as follows:

Depletion rate:  $(\$110,000 - \$10,000) \div 1,000,000 = \$.10$  per unit  
Depletion charge for the year:  $80,000 \times \$.10 = \$8,000$

If developmental costs are involved before exploitation of the resource is possible, such costs are added to the original cost of the property subject to depletion. Developmental costs of \$50,000 would raise the depletion rate in the example to 15 cents per unit.

Assuming a depletion charge for the year of \$8,000 as reported above, an entry is made as follows:

Depletion (or Product Account) . . . . .	8,000
Allowance for Depletion . . . . .	8,000

The charge for depletion, increased by labor and overhead relating to removal and processing, is recognized in the cost of goods sold

section of the income statement. If all of the units represented by the depletion charge are sold, depletion, labor, and overhead costs measure the cost of goods sold to be applied against revenue in arriving at gross profit; if some of the units remain on hand, their cost should be determined by considering depletion, labor, and overhead elements, and this figure should be subtracted from the total cost of making the resources available in arriving at cost of goods sold. Depletion, therefore, may be compared to raw materials purchases in summarizing activities. The allowance for depletion is subtracted from the property account on the balance sheet in arriving at the cost of the asset assignable to future revenues.

When certain structures and improvements are constructed in connection with ventures involving the exploitation of natural resources and it is believed that the usefulness of such assets will be limited to the duration of the project, it is reasonable to assign the costs of these assets to revenue in the same manner as that employed for the natural resources themselves. For example, assume in the preceding example that buildings are constructed at a cost of \$25,000; the useful life of the buildings is considered to terminate upon exhaustion of the natural resource, the buildings thus servicing operations during the removal of 1,000,000 units. Under such circumstances, a depreciation charge of \$.025 ( $\$25,000 \div 1,000,000$ ) may be considered to accompany the depletion charge of \$.10 for every unit removed. When costs provide benefits that are expected to terminate prior to the exhaustion of the natural resource, such costs may be allocated in terms of a rate based upon the units that such costs are estimated to service or on a time basis, whichever may be considered more appropriate.

It should be observed that, for income tax purposes, the taxpayer in certain instances is permitted to use the fair market value of a natural resource as of the date of its discovery as a basis for depletion and in other instances is allowed depletion as a fixed percentage of gross income. Depletion for tax purposes, then, may differ from the amounts reported in the books on the basis of cost.

#### **DIVIDENDS REPRESENTING PROCEEDS FROM WASTING ASSETS**

When a company's stock in trade is its wasting assets, revenue represents a recovery of the cost of such wasting assets charged to operations, a recovery of other expenses, and a net profit margin. When natural resources are not to be replaced and operations are to cease upon exhaustion of the resource, dividends need not be limited to net income but may be paid in amounts equal to such net income increased by the amount charged against revenue as depletion. To

limit dividends to net income would be to retain the amount recovered from wasting assets within the business, possibly in unproductive form, until such time as the business is liquidated. In the absence of effective utilization of revenue proceeds for new properties or other productive purposes, such assets should be made available to stockholders. Amounts received by stockholders, then, are in part a distribution of earnings and in part a return of invested capital no longer required by the organization.

To illustrate the nature of the foregoing, assume the following facts for the Midas Mines Co. at the beginning of a fiscal period:

Wasting Assets. . . . . \$100,000    Capital Stock . . . . . \$100,000

During the course of the fiscal period, natural resources that cost \$25,000 are sold for \$50,000 and operating expenses of \$10,000 are incurred. At the end of the period, the balance sheet reports the following:

MIDAS MINES CO.  
BALANCE SHEET  
DECEMBER 31, 19 -

Cash . . . . .	\$ 35,000	Liabilities . . . . .	\$ 5,000
Receivables . . . . .	10,000	Capital stock . . . . .	100,000
Wasting assets \$100,000		Earned surplus . . . . .	15,000
Less allowance			
for depletion . . . . .	25,000    75,000		
Total assets . . . . .	\$120,000	Total liabilities and capital	\$120,000

Management, here, does not need to limit dividends to the balance of earned surplus, \$15,000, but may consider the limitation to be \$40,000, that is, \$15,000 increased by the recovery of the asset depletion, \$25,000. Under the circumstances above, since revenue has not been fully realized in cash, and since some cash is required for a continuation of operations, dividends of a lesser amount would be in order. A dividend of \$25,000 would be regarded as representing first a distribution of earnings of \$15,000, the balance a distribution of invested capital of \$10,000. The return of invested capital is reported as a charge to a capital stock offset balance rather than as a charge to capital stock. The entry to record the \$25,000 distribution may be made as follows:

Earned Surplus . . . . .	15,000
Capital Distributions to Stockholders . . . . .	10,000
Cash . . . . .	25,000

A balance sheet prepared after the distribution will appear as follows:

## MIDAS MINES CO.

## BALANCE SHEET

DECEMBER 31, 19--

Cash.....	\$10,000	Liabilities . . . . .	\$ 5,000
Receivables.....	10,000	Capital stock	\$100,000
Wasting assets . . .	\$100,000	Less capital dis-	
Less allowance		tributions to	
for depletion . . .	25,000	stockholders	10,000
	75,000		90,000
Total assets . . . . .	\$95,000	Total liabilities and capital.	\$95,000

The distribution to stockholders of amounts equal to net income increased by the depletion charge is permitted by state laws; such action is sanctioned on the theory that creditors are aware of the shrinking investment requirements that are peculiar to operations involving wasting assets not subject to replacement. As already indicated in an earlier chapter, when dividends are distributed that are in part liquidating, stockholders should be informed by the corporation of the portion of the dividend that represents corporate earnings and of the portion that represents a return of original investment.

## QUESTIONS

1. "Depreciation is an optional charge that the manufacturer may or may not include in finished goods cost." Do you believe this statement to be correct? Discuss.
2. Explain the meaning of depreciation accounting.
3. "The recognition of depreciation has no essential relation to the problem of replacement." Do you agree? Discuss.
4. Distinguish between functional depreciation and physical depreciation.
5. Distinguish between inadequacy and obsolescence.
6. The president of the Hathaway Co. recommends that no depreciation be recorded for 1953 since the depreciation rate is 5% per year and indexes show prices during the year to have risen by more than this figure. Evaluate this argument.
7. The policy of the Burke Co. is to recondition its plant each year so that it may be maintained in perfect repair. In view of the extensive periodic costs involved in keeping the plant in such condition, officials of the company feel that the need for recognizing depreciation is eliminated. Evaluate this argument.
8. The board of directors of Chambers, Inc. believes that it is proper to provide for depreciation when determining profit or loss on operations.

Because depreciation does not affect the cash position of the company, however, the board believes it can be disregarded in determining the amount of profits available for dividends. To what condition might such a policy lead?

**9.** Describe the calculation of periodic depreciation under each of the following methods:

- (a) Straight-line
- (b) Sum of years' digits.
- (c) Fixed percentage applied to diminishing book value.
- (d) Service-hours.
- (e) Productive-output.
- (f) Arbitrary diminishing rate applied to cost.

**10.** Evaluate each method listed in Question 9 above, indicating the circumstances under which the method would be particularly appropriate and the advantages found in its use.

**11.** The Heslip Co. has written down its plant and equipment account to \$1. It defends this treatment on the grounds that it had adequate earned surplus to accomplish the write-down, and such practice is desirable in the interest of "accounting conservatism." Comment on this practice.

**12.** Phillip Grover, president of the R-X Corp., upon inspecting the accounting statements for the first year of operations objects to the use of straight-line depreciation on the grounds that the loss in value of the assets the first year is actually greater than that in subsequent years. What is your answer?

**13.** Would you recommend the use of a reducing-charge method for recording depreciation or the use of straight-line depreciation with a separate allowance for maintenance when maintenance costs are expected to increase over the life of the asset? Give your reasons.

**14.** When, in your opinion, would the use of a composite depreciation rate be appropriate?

**15.** (a) Describe the establishment of plant charges to operations under (1) the retirement system, (2) the replacement system, and (3) the appraisal system. (b) Do you recommend the use of such procedures?

**16.** (a) Define wasting assets. (b) Give five examples of wasting assets.

**17.** (a) Define depletion. (b) What distinctions can be made between depletion and depreciation?

**18.** What special problems are involved in recording depreciation on plant and equipment items that are used in connection with the exploitation of natural resources?

**19.** Justify the practice, followed in the case of a company with wasting assets, of adding the charge for depletion to net income in arriving at the amount available for dividends.

## EXERCISES

1. The Jones Company has a certain machine costing \$50,000 with a useful life of 5 years and salvage value of \$2,000. The estimated operating life of the machine is 20,000 hours. In 1953 total hours amounted to 3,000; in 1954, 5,000. Compare depreciation charges for both years, using the straight-line, productive-hours, and reducing-fraction methods.

2. Wesley Sales acquires machinery at a cost of \$10,000. The estimated life of the asset is 5 years, and it is believed that the asset will have to be scrapped at the end of this time with a value of approximately \$100. Prepare a table of depreciation charges for the 5-year period if depreciation is recorded at a fixed percentage on the diminishing book value of the asset. (The fifth root of .01 = .398.)

3. The McArthur Manufacturing Co. acquires a machine at a cost of \$18,600 on March 1, 1947. The machine is estimated to have a life of 10 years except for a special unit that will require replacement at the end of 6 years. The asset is recorded in two accounts, \$3,600 being assigned to the special unit, the balance of the cost to the main unit. Depreciation is recorded by the straight-line method, residual values being disregarded. On March 1, 1953, the special unit is scrapped and is replaced with a similar unit; the cost of the replacement at this time is \$4,800, and it is estimated that the unit will have a residual value of approximately 25% of cost at the end of the useful life of the main unit. What are the depreciation charges to be recognized for the years 1947, 1953, and 1954?

4. The Winter Co. acquired a machine on October 1, 1943, at a cost of \$10,500. The machine was estimated to have a life of 10 years and a scrap value at the end of that time of \$500. At the beginning of April, 1945, adjustments were made to the machine increasing its operating capacity 25%; the cost of such work was \$1,700. The machine was sold on January 5, 1953, for cash of \$550. The fiscal period for the Winter Co. is the calendar year. (a) What entries would be made to record depreciation at the end of 1943, 1944, and 1945? (b) What entry would be made to record the disposal of the machine in 1953?

5. The Marshall Co. acquires machinery on January 1, 1953, at a cost of \$8,000; the estimated salvage on the machinery is \$250 at the end of a 10-year life. The machinery is guaranteed to perform satisfactorily for a 3-year period; it is estimated that repairs for the first year following the guarantee period will amount to \$150 and that repairs will increase by approximately \$100 per year thereafter until the machinery is scrapped. Prepare a table, similar to the one illustrated on page 453 of the text, reporting periodic depreciation charges for the 10-year period, assuming depreciation is to be recorded at amounts that will result in the same amount for the sum of depreciation and repairs over the life of the asset.

6. The Warner Co. records show the following assets:

	ACQUIRED	COST	RESIDUAL VALUE	ESTIMATED USEFUL LIFE
Machinery	7/1/52	\$65,000	\$5,000	10 years
Equipment	1/1/53	25,000	1,000	6 years
Fixtures	1/1/53	15,000	3,000	4 years

What is (a) the composite life of the assets and (b) the composite depreciation rate on assets?

7. The Barton Co. obtains a lease for 25 years on a piece of land upon which it erects a building at a cost of \$25,000 with an estimated life of 30 years. Buildings belong to the lessor at the end of the lease period. It also leases another piece of land for 20 years and erects a factory at a cost of \$18,000 with an estimated life of 15 years. What is the annual depreciation charge on each piece of property?

8. The Grand Island Trucking Company replaces worn dump bodies on ten of its trucks with new type bodies at a cost of \$500 per truck. Bodies similar to the old types used would have cost only \$300, but it is estimated that the additional cost will be justified by larger loading facilities. (a) How should the purchase be recorded? (b) How should subsequent depreciation on the trucks be calculated?

9. A paving contractor purchases a pavement-breaking outfit, including air compressor and hammers, at a cost of \$2,400. The outfit has an estimated life of 12 years with the exception of the air hammers, which replace equipment every 2 years at a cost of \$600. What adjusting entries should be made at the end of the first year?

10. Whitehaven Construction Company purchases for \$50,000 a property with a gravel deposit estimated at 1,000,000 cubic yards. During the first year of operations 50,000 cubic yards of gravel are removed. How is depletion recorded at the end of the year?

## PROBLEMS

16-1. The cost of a machine purchased by Pollard Inc. on March 1, 1953, is \$22,600. It is estimated that the machine will have a \$1,600 trade-in value at the end of its service life. Its life is estimated at 6 years; its working hours are estimated at 25,000; its production is estimated at 375,000 units. During 1953, the machine was operated 5,400 hours and produced 78,000 units.

*Instructions:* Compute the depreciation on the machine for 1953 by: (1) the straight-line method, (2) the productive-hours method, (3) the output method, (4) the reducing-fraction method, and (5) an annual rate of 35% applied to the diminishing book value.

16-2. Majestic Tubing Inc. installs a processing line on November 1, 1953, at a cost of \$72,000. It is estimated that the machinery will have an 8-year life, and that the cost of removing machinery at the end of this time will be equal to its scrap value. It is estimated that the machine will process 200,000,000 units during its useful life. During 1953 and 1954, 2,400,000 units and 15,000,000 units respectively were produced.

*Instructions:* Compute the depreciation on the machinery for the years ended December 31, 1953 and 1954, using (1) the straight-line method, (2) the output method, and (3) the reducing-fraction method.

**16-3.** A delivery truck was acquired by Ames, Inc. for \$3,000 on January 1953. The truck was estimated to have a 5-year life and a trade-in value at the end of that time of \$300. Prepare tables reporting periodic depreciation over the 5-year period, similar to those illustrated in the text, for each assumption below:

- (1) Depreciation is to be calculated by the straight-line method.
- (2) Depreciation is to be calculated by the reducing-fraction (sum of years' digits) method.
- (3) Depreciation is to be calculated by applying a fixed percentage to the diminishing book value of the asset. (The fifth root of .10 = .631)
- (4) Repair charges are estimated at \$50 for the first year and are estimated to increase by \$50 in each succeeding year; depreciation charges are to be made on a diminishing scale so that the sum of depreciation and estimated repairs is the same over the life of the asset.

**16-4.** Information relating to the equipment owned by the Wendell Bros. follows.

	COST	ESTIMATED SCRAP VALUE	ESTIMATED LIFE IN YEARS
Store Equipment	\$15,000	\$ 600	12
Office Equipment	8,900	500	6
Factory Equipment	42,000	2,500	10
Delivery Equipment	16,000	4,000	4

*Instructions:* Calculate (1) a composite depreciation rate and (2) the composite life for the equipment owned.

**16-5.** Equipment items are acquired by the Wexler Co. on March 1, 1953, as follows:

	COST	RESIDUAL VALUE	ESTIMATED LIFE IN YEARS
Equipment Item A	\$16,000	\$5,000	4
B	7,500	500	8
C	10,000	1,500	8
D	6,500	3,000	4
E	3,000	1,500	4

*Instructions:* (1) Calculate a composite depreciation rate for this group of equipment items.

(2) Calculate the average life in years for the group.

(3) Give the entry to record the depreciation for the year ending December 31, 1953.

**16-6.** The Tempkin Co. uses certain hand tools in manufacturing activities. On December 31, 1950, there are 400 such tools on hand at a cost of \$4.65 each. Acquisitions and retirements in the years 1951-1953 follow.

	ACQUISITIONS AND COST	RETIREMENTS AND RETIREMENT PROCEEDS
1951	140 @ \$4.80	115 @ \$.60
1952	165 @ 4.95	160 @ .65
1953	150 @ 5.00	185 @ .75

Retirements may be assumed to be on a first-in, first-out basis.

*Instructions:* Give all of the entries affecting the tools account for 1951, 1952, and 1953, assuming that:

(1) Operations are charged for the cost of tool retirements, less recovery on such units.

(2) Tools on hand at the end of each year are valued at 50% of cost.

(3) Operations are charged for the cost of periodic acquisitions equal to retirements, less recovery on the old units; any tools acquired in excess of retirements are reported as an increase in the asset balance; any deficiency in the acquisitions over retirements calls for an additional charge to operations for the shrinkage in the tools balance on the basis of past costs.

**16-7.** In reviewing the books for the Alcord Co. on December 31, 1953, the end of their first year of operations, you find that a number of errors were made in recording transactions relating to delivery equipment. The delivery equipment account shows the following data:

DELIVERY EQUIPMENT							
1953				1953			
Jan. 2	Purchase of Trucks #1 & #2 for cash:			Mar. 16	Amount recovered on insurance policy for damages to Truck #1	225	
		#1	#2	Total			
	Contract price	2,600	4,000	6,600	Dec. 31	Depreciation for year, 25%	3,122
	Sales tax	52	80	132			
	License for 1953	40	55	95			
Mar. 5	Purchase of Truck #3 for cash:						
	Contract price			3,650			
	Sales tax			76			
	License for 1953			50			
Mar. 12	Cost of repairs to Truck #1 resulting from accident			300			
Nov. 6	Additional payment on trade-in of Truck #1 for Truck #4			1,810			

Investigation of the transaction of November 6 discloses the following:

Contract price, Truck #4	\$3,600
Sales tax	72
License for 1953	15
	\$3,687
Trade-in allowance - Truck #1	1,877
Balance paid in cash.	\$1,810

Depreciation had been recorded at 25% of the balance in the delivery equipment account. It is determined that each truck is estimated to have a useful life of 4 years and a trade-in value of approximately 30% of total cost at the end of its useful life.

*Instructions:* Assuming that nominal accounts for 1953 are still open, give all of the entries that are required in correcting the accounts as a result of the data given above.

**16-8.** At the close of each year Fredd and Co. determines the total cost of machinery in the assembly department and, without consideration of the acquisition date or life of the individual assets, applies a rate of  $16\frac{2}{3}\%$  to the total cost in calculating depreciation for the year. At the end of 1953 it is decided that more satisfactory estimates for depreciation would be obtained by use of the straight-line method as applied to individual machines within the department. Data relative to the machines in the department on this date follow:

MACHINE	DATE ACQUIRED	COST	ESTIMATED SCRAP VALUE	ESTIMATED LIFE IN YEARS
W	April 5, 1951	\$22,800	\$1,800	6
X	May 21, 1951	12,000	2,400	4
Y	Nov. 28, 1952	4,500	300	8
Z	Oct. 5, 1953	12,500	1,500	5

*Instructions:* (1) Determine (a) the balance in the depreciation allowance account as of January 1, 1953, based upon use of the  $16\frac{2}{3}\%$  depreciation rate, and (b) the balance if straight-line depreciation had been recorded. (Show calculations.)

(2) Give the journal entries (a) to adjust the allowance account so it reflects depreciation as calculated on individual items and (b) to record the depreciation for 1953 on the revised basis. (Show calculations.)

**16-9.** The McAllister Department Store maintains a fleet of trucks used for mail order deliveries. A summary of the transactions involving delivery trucks is as follows:

Mar. 3, 1953	Purchased three trucks (Model D, assigned Nos. 1, 2, and 3) for cash. The cost of each truck was \$2,200; the estimated life, 3 years; the estimated trade-in value at that time, \$100.
Sept. 25, 1953	Purchased two trucks (Model J, Nos. 4 and 5) for cash. The cost of each truck was \$2,750; the estimated life, 3 years; the estimated trade-in value at that time, \$500.
Oct. 5, 1954	Truck No. 2, which had not been operating satisfactorily, was traded in for a new and larger truck (Model S, No. 6). The cost of the new truck was \$2,900; the estimated life, 3 years; the estimated trade-in value at that time, \$500. An allowance of \$650 was received on the old truck; the balance was paid in cash.
Aug. 10, 1955	Truck No. 5 was destroyed by fire. Cash of \$950 was realized from the insurance on the truck.
Dec. 2, 1955	Trucks Nos. 1 and 3 were traded in on the purchase of three new trucks (Model X, Nos. 7, 8, 9). The cost of each truck was \$3,600; the estimated life, 3 years; the estimated trade-in

value at that time, \$600. An allowance of \$600 was received on each old truck and the balance was paid in cash.

*Instructions:* (1) Set up a controlling account for Delivery Trucks and an account for Allowance for Depreciation of Delivery Trucks. Set up individual accounts in a subsidiary ledger for delivery trucks numbered 1 to 9. The latter accounts are to be set up in the following form:

DESCRIPTION		No. Assigned					
DATE	REMARKS	ASSET			ALLOWANCE		
		DEBITS	CREDITS	BALANCE	DEBITS	CREDITS	BALANCE

(2) Record in journal form the foregoing transactions as well as the adjusting entries required to record depreciation for the annual fiscal periods on December 31 of each year, 1953 to 1955 inclusive. Post only to accounts provided for in part (1). (Depreciation is recorded by the straight-line method to the nearest month. Assets acquired by a trade-in are recorded at their regular purchase price.)

(3) Prepare schedules to reconcile the balances in the accounts Delivery Trucks and Allowance for Depreciation of Delivery Trucks with the information in the subsidiary ledger as of December 31, 1955.

~~16-10~~ The Melnick Corp. was organized on January 2, 1953. It was authorized to issue 100,000 shares of common stock, par \$10. On the date of organization it sold 40,000 shares at par and gave the remaining shares in exchange for certain land bearing recoverable ore deposits estimated by geologists at 800,000 tons.

During 1953 mine improvements totaled \$17,500. Miscellaneous buildings and sheds were constructed at a cost of \$22,500. During the year 35,000 tons were mined; 6,500 tons of this amount were on hand unsold on December 31, the balance of the tonnage being sold for cash at \$4.50 per ton. Costs incurred and paid for during the year, exclusive of depletion and depreciation, were as follows:

Mining costs . . . . .	\$84,000
Delivery costs . . . . .	9,250
General and administrative costs . . . . .	8,800

Cash dividends of \$2.50 per share are declared on December 31, payable January 15, 1954.

It is believed that buildings and sheds will be useful only over the life of the mine; hence depreciation is to be recognized in terms of mine output.

*Instructions:* Prepare an income statement and a balance sheet for 1953. Submit T accounts or working papers showing the development of statement data.

**16-11.** The B. C. Manufacturing Company started in business on January 1, 1949, by acquiring three machines having a cost of \$5,240, \$4,000, and

\$4,400 respectively. Since that date the company has computed depreciation at 20% on the balance of the asset account at the end of each year, which amounts have been credited directly to the asset account. All purchases since January 1, 1949, have been debited to the machinery account, and the cash received from the sales has been credited to the account.

The following transactions took place:

- (a) On September 30, 1949, a machine was purchased on an installment basis. The list price was \$6,000, but 12 payments of \$600 each were made by the company. Only the monthly payments were recorded in the machinery account, starting with September 30, 1949. Freight and installation charges of \$200 were paid and entered in the machinery account on October 10, 1949.
- (b) On June 30, 1950, a machine was purchased for \$8,000, 2/10, n/30, and was recorded at \$8,000 when paid for on July 7, 1950.
- (c) On June 30, 1951, the machine acquired for \$5,240 was traded for a larger one having a list price of \$9,300. An allowance of \$4,300 was received on the old machine, the balance of the list price being paid in cash and charged to the machinery account.
- (d) On January 1, 1952, the machine that cost \$4,400 was sold for \$2,500, but because the cost of removal and crating was \$125, the machinery account was credited with only \$2,375.
- (e) On October 1, 1953, the machine purchased for \$4,000 was sold for cash and the cash received was credited to the account.
- (f) The balance of the account on January 1, 1953, was \$14,505.50, and on December 31, 1953, after adjustment for depreciation, it was \$10,644.40.

The company has decided that its method of handling its machinery account has not been satisfactory. Accordingly, after the books were closed in 1953, the management decided to correct the account as of December 31, 1953, in accordance with usual accounting practices, and to provide depreciation on a straight-line basis with a separate allowance account. Straight-line depreciation is estimated to be at the rate of 10% per annum computed on a monthly basis, over one half of a month being considered as a full month for this purpose.

*Instructions:* (1) Give the entries that would have been made for the purchase of assets, the sale of assets, and periodic depreciation for the years 1949 through 1953 if the revised basis of depreciation had been used. Income tax procedures are not to be considered in your solution.

(2) Prepare a schedule showing the balance of the machinery account and of the allowance for depreciation account as of December 31, 1953, on the revised basis.

(3) Prepare a schedule of gain and loss on disposal of assets during the 5-year period on the revised basis. (A.I.A. adapted)

**16-12.** An income statement and a balance sheet for the Concord Company, showing the results of operations for the year ended December 31, 1953, were prepared for submission to the directors in January, 1954.

Before the statements were approved, a report of an investigation of the accounts of the company for the years 1949, 1950, and 1951 was received from the Internal Revenue Department. This report reduced considerably the large amounts of depreciation written off various assets

and made a claim for the difference as additional excess profits and income taxes.

The claim was subsequently paid, and the directors decided to have the accounts for the years 1952 and 1953 and the balance sheets at the end of those years redrafted in order to bring them into agreement with the figures shown in the internal revenue report. The accounts on the books of the company appeared as follows:

PROPERTY ACCOUNTS 1952	VALUATION JAN. 1	ADDITIONS DURING YEAR	DEPRECIATION DEC. 31	BALANCE FORWARD
Real estate	\$200,503.79	\$ 2,249.08*	\$10,162.61	\$192,590.26
Machinery & tools	2,206.95	1,799.01	1,918.07	2,087.89
Auto trucks	21,521.06	31,000.48	12,360.08	40,161.46
Horse trucks	132.50		132.50	
Horses	800.00	575.00	583.34	791.66
Harness	245.70	61.05	221.75	85.00
Office furniture	1,774.42	2,909.86	1,610.59	3,073.69
	\$227,184.42	\$38,594.48	\$26,988.94	\$238,789.96

PROPERTY ACCOUNTS 1953	VALUATION JAN. 1	ADDITIONS DURING YEAR	DEPRECIATION DEC. 31	BALANCE FORWARD
Real estate	\$192,590.26	\$ 210.00*	\$ 3,300.26	\$189,500.00
Machinery & tools	2,087.89	1,235.88	1,755.73	1,567.54
Auto trucks	40,161.46	8,782.41	17,134.84	31,809.03
Horse trucks		112.58	66.92	45.66
Horses	791.66	700.00	741.67	749.99
Harness	85.00	80.00	143.00	22.00
Office furniture	3,073.69	3,264.54	3,400.86	2,937.37
	\$238,789.96	\$14,384.91	\$26,543.28	\$226,631.59

\*The additions to real estate in 1952 and 1953 apply to sheds.

The internal revenue agents traced back the original costs of the assets and all additions. Against these total costs they created depreciation allowances at the rates shown at the top of the following page. Note that in the table the item of real estate has been divided by the internal revenue agents into three separate classes to show different rates of depreciation.

*Instructions:* (1) Take the internal revenue figures as at the date to which the examination was restricted (December 31, 1951) and extend them on the same basis to December 31, 1953. The amounts of additions to assets stated in the books of the company for the years 1952 and 1953 are to be taken as correct.

(2) Bring the amounts of total cost into the accounts of the company, create the necessary allowances for depreciation, and state the adjustments required in the profit and loss accounts, the surplus account, and the balance sheet accounts at December 31, 1952 and 1953, in order to show the effect of these changes. (Depreciation at half the annual rate is applicable to acquisitions made during a year.) (A.I.A. adapted)

## SUMMARY OF REPORT OF INTERNAL REVENUE DEPARTMENT AGENTS

	TOTAL COST TO JAN. 1, 1952	DEPRECIATION ALLOWANCE JAN. 1, 1952	ANNUAL RATE OF DEPRECIA- TION ALLOWED
Real estate:			
Land	\$164,364.60	(none)	(none)
Sheds	9,581.14	\$ 1,578.11	10%
Brick buildings	39,596.93	2,143.88	2%
Machinery and tools	8,701.97	4,306.77	20%
Auto trucks	72,297.42	37,429.11	20%
Horse trucks	1,691.63	680.39	16 $\frac{2}{3}$ %
Horses	5,788.17	2,873.07	20%
Harness	1,444.59	1,116.92	33 $\frac{1}{3}$ %
Office furniture	5,576.92	1,311.03	10%
		\$51,439.28	
Depreciation allowance (not allocated to specific assets) for period prior to Jan. 1, 1949..		12,718.36	
	\$309,043.37	\$64,157.64	

**16-13.** The following data are furnished by the Calhoon Copper Company concerning the current year's sales and operations at its mine and smelter:

Inventories at the beginning of the year:

Ore — valued at book cost, which includes depreciation and depletion  
100,000 tons at \$2.80 per ton . \$ 280,000

Copper likewise valued at book cost  
30,000,000 pounds at 9.8 cents per pound 2,940,000

Production costs, including depreciation but before depletion:

Ore — 2,500,000 tons at \$2.052 per ton 5,130,000

Smelting cost 1.5 cents per pound of copper produced, including cost of  
transporting ore from mine to smelter

Yield — 30 pounds of copper per ton of ore

Inventories at the end of the year:

Ore 600,000 tons (all at mine)

Copper 20,000,000 pounds

All sales of copper were made at 11 cents per pound

Ore reserves at the beginning of the year:

Per books 10,000,000 tons, carried at \$8,000,000

No new ore deposits were purchased during the year

Ore reserves at the end of the year:

Per engineer's survey — 13,400,000 tons

*Instructions:* Prepare the following statements showing both quantities and unit costs computed on three alternative bases of valuing inventories consistently applied throughout the problem (beginning inventories are to be corrected in accordance with new estimates):

(a) Cost of ore mined.

(b) Cost of copper sold.

(c) Gross profit on copper sold. (A.I.A. adapted)

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## *Plant and Equipment Revaluations*

### **COST AND DEPRECIATION CHANGES**

It was suggested in the previous chapter that plant and equipment items are recorded at cost, that estimates are made as to the useful lives of the assets, and that schedules are developed for the reasonable and systematic allocation of costs to operating periods. These are the normal procedures that are employed in accounting for plant and equipment. But during the course of asset use, certain circumstances may suggest revisions in original cost allotment plans and, in some instances, the actual departure from cost as a basis for asset valuation as well as for periodic depreciation charges. These are the problems toward which attention is directed in this chapter.

### **CHANGES IN ESTIMATES OF ASSET LIFE OR DEPRECIABLE COST**

When an asset is retired, any errors in the estimates of asset life and asset residual value become evident. Compensation is made for asset overdepreciation or underdepreciation at this time. If depreciation has been inadequate, the book value of the asset will exceed its residual value and a special decrease in proprietorship must be recognized; if depreciation has been overstated, the book value of the asset will be less than its residual value and an increase in proprietorship must be recognized.

It may become evident during the life of a property item that depreciation is incorrectly estimated and that the periodic charge is inadequate or excessive. Under such circumstances, one must choose between the following procedures:

- (1) The asset book value may be accepted as it stands, and depreciation charges for the remaining life of the asset may be modified to compensate for errors in charges already made.
- (2) The asset book value may be revised by a correcting entry to a depreciated value on the basis of present evidence, and depreciation charges for the remaining life of the asset made in accordance with information now available.

To illustrate the foregoing procedures, assume the use of a property item with an estimated life of 10 years and depreciation at the rate of 10% per year. At the end of 5 years, when the book value of the asset is reduced to 50% of cost, it is determined that the asset will have a

useful life of 10 more years. If no correction in prior depreciation is recognized, the remaining asset cost would be distributed over the remaining life or at the rate of 5% per year on original cost. If a correction for past overdepreciation is made, the asset book value would be raised to  $\frac{2}{3}$  of original cost and depreciation for the remaining life would be reported in terms of the revised life of the asset or at the rate  $6\frac{2}{3}\%$  per year ( $100\% \div 15$ , or  $66\frac{2}{3}\% \div 10$ ).

The first position, which accepts existing book value as a basis for subsequent charges, has received wide support in practice. Those who support this position insist that cost once assigned to revenue is a permanent disposition of such cost and that it is only cost not yet assigned to revenue that is subject to future allocation. The correction of accounts for depreciation recognized in prior periods is unacceptable, it is maintained, since such revision will result in a series of depreciation charges over the life of the asset that will be more or less than the original depreciable cost. The American Accounting Association gives full support to this position as follows:

An assignment of all or a portion of the cost of an asset to expense, made in good faith after considered judgment and after competent review, in accordance with the accepted concepts and standards of the time, is not subject to reversal in a later period. Errors of a mechanical and nonjudgment nature should be corrected in the period of their discovery.<sup>1</sup>

Further support for the first position is found in certain practical considerations. This is the general approach that must be taken for income tax purposes; depreciation once allowed for tax purposes is not subject to later revision. When depreciation on the books is maintained in accordance with income tax requirements, special account analysis and restatement of depreciation data may be avoided in the development of tax returns.

Those taking the second position insist that errors, no matter what their source, call for appropriate correction. The depreciation to be recognized each period should be the best estimate that is determinable from the evidence at hand. Errors in past depreciation should not call for compensating errors in subsequent charges; such a practice will serve only to distort measurements both past and future. The American Institute Committee on Accounting Procedure, while sympathetic to the first position "under most circumstances," agrees that restatement of past charges may be desirable in certain instances. The Committee finds no objection to the practice of reflecting corrections in estimates in revised charges during the remaining life of the property

<sup>1</sup>*Accounting Concepts and Standards Underlying Corporate Financial Statements*, 1948 Revision (Urbana: American Accounting Association), p. 5.

if amounts involved are not material or if the alternate course would provide no significantly different operating results when applied to all of the property items, some of which involve depreciation overestimates and others underestimates. However, the Committee points out:

In special situations in which material amounts of depreciable assets are determined to have a substantially longer or shorter life than was originally anticipated, a more adequate assignment of cost to future revenues to be derived from such assets during their useful lives may result from an adjustment or restatement of the accumulated depreciation previously recorded. Such a reallocation of the cost of assets between past and future operations and revenues may be desirable when there have been circumstances which prevented the determination of an ordinary and reasonable approximation of the useful lives of assets and when the amounts of such assets and the annual depreciation charges thereon are large in relation to the total property in use and to the annual net income. In general, useful financial statements are not achieved by an understatement or an overstatement of asset carrying value which is to be accompanied by an overstatement or understatement of future income because of materially excessive or deficient prior allocations of costs.<sup>1</sup>

There can be little objection on theoretical grounds to the foregoing position.

The nature of the accounting when corrections are made in the accounts in recognition of depreciation understatement and overstatement in past periods is described in the following section.

#### **RECORDING DEPRECIATION CHANGES IN THE ACCOUNTS**

*Understatement of Depreciation.* To illustrate the procedure that is followed when depreciation has been inadequate and a correction in such past charges is to be made,

assume that machinery costing \$15,000 has been depreciated by the straight-line method on an estimated 15-year life. No residual value on the asset has been anticipated. After the machinery has been used for 5 years, it is determined that the useful life of the asset should have been estimated at 10 years. The annual depreciation, then, should have been \$1,500 instead of \$1,000, and the depreciation for the first 5 years has been understated by \$2,500. The entry to correct the accounts is:

Corrections in Profits of Prior Periods — Understatement of Depreciation Charges (or Earned Surplus)	2,500	
Allowance for Depreciation of Machinery		2,500

The nature of the entry to record the correction depends upon the statement that is to be used in reporting the correction. Recognition

<sup>1</sup>*Accounting Research Bulletin No. 27, "Emergency Facilities,"* November, 1946 (New York: American Institute of Accountants), p. 225.

of corrections on the income statement may be preferred on the theory that corrections serve to modify past measurements reported on this statement; on the other hand, if the income statement is to measure only current operating performance, corrections are reported on the earned surplus statement. If corrections in profits of prior periods are to appear on the income statement, a nominal account is opened for such corrections. A single account may be used to summarize all corrections, appropriate detail being provided in the account for each correction. If the correction detail is to be provided for report purposes, an analysis of the account will offer the required data. It is also possible to show each correction in a separate nominal account if desired. If corrections are to be reported on the surplus statement, the earned surplus account is charged or credited. This account is subsequently analyzed in developing the detail for the surplus statement.

In the example just given, assuming no further revision at a later date, the entry to record depreciation for each of the remaining years of asset life is:

Depreciation of Machinery . . . . .	1,500
Allowance for Depreciation of Machinery. . . . .	1,500

*Understatement of Depreciation — Income Tax Requirements.* A taxpayer who, in submitting tax returns, has failed to take any depreciation or has taken depreciation that was clearly inadequate, cannot take advantage of such omissions on later tax returns. But it may be possible to prepare amended tax returns for certain prior years, thus permitting the recognition of increased depreciation in accordance with revised estimates for such years. When depreciation charges in past years are considered adequate but current and future conditions will serve to limit the life of the asset to a period that is less than the remaining life according to original estimates, the undepreciated asset cost may be spread over its estimated remaining life. Under such circumstances, increased charges for depreciation are appropriate for accounting purposes as well as for income tax purposes.

*Overstatement of Depreciation.* When depreciation on an asset has been overstated, a procedure consistent with that for understatements calls for a charge to the asset allowance account and a credit to a correction account or to Earned Surplus for the excess amount. The correct rate is then used in recording subsequent depreciation. To illustrate, assume that machinery costing \$15,000 has been depreciated by the straight-line method on an estimated 15-year life. After use of the machinery for 10 years, it is determined that the useful life of the asset should have been estimated at 20 years instead of 15. The annual

depreciation, then, should have been \$750 instead of \$1,000 and the depreciation for the first 10 years has been overstated by \$2,500. The entry to correct the accounts is:

Allowance for Depreciation of Machinery	2,500
Corrections in Profits of Prior Periods	Overstate-
ment of Depreciation Charges (or Earned Surplus)	2,500

The entry to record depreciation for each of the remaining years of asset life, in the absence of further revision at some later date, is as follows:

Depreciation of Machinery	...	750
Allowance for Depreciation of Machinery	..	750

Correction in past depreciation is indicated in the case of a fully depreciated asset that is continued in use, except when continued use involves extraordinary maintenance and repair costs that suggest little or no contribution on the part of the asset itself. A fully depreciated asset may be continued in use during a war period, for example, because of inability to make replacement. Inefficiencies and extraordinary charges may actually make the use of such an asset more costly than a new machine, and under such circumstances no value can be assigned to the property item. Account balances relating to fully depreciated assets should not be offset until the property items are actually retired; accounting statements should provide parenthetical or note references to fully depreciated assets continued in use and included in the account totals.

*Overstatement of Depreciation — Income Tax Requirements.* For income tax purposes, when depreciation has been allowed at a certain rate in the past, the taxpayer is limited to a recovery of no more than the remaining book value over the remaining life of the asset unless amended tax returns are filed for certain prior years that may still be open according to law. For example, in the preceding illustration, having been allowed deductions of \$10,000 during the first 10 years, the taxpayer must regard the remaining book value of the asset for tax purposes as \$5,000. Depreciation over the remaining life of the asset, now estimated at 10 years, is limited to the unrecovered cost, \$5,000, or \$500 per year.

#### **DEPRECIATION OF "EMERGENCY FACILITIES"**

During World War II and in the defense preparations in the post-war period, productive facilities essential to war and defense efforts have been acquired under *certificates of necessity* issued pursuant to Section 124 and 124A of the Internal Revenue Code. Properties, including land, buildings, machinery, and equipment, acquired under such certificates are termed *emergency facilities*. Certificates permit

the taxpayer to amortize for income tax purposes a part or all of the asset cost over a period of 60 months.

From an accounting point of view, the acquisition of an asset under a certificate of necessity should have no influence upon the plan for cost allocation. When facilities are considered of a special-purpose nature and their contribution to revenue is expected to expire over a 60-month period, depreciation for book purposes may properly parallel deductions allowed for tax purposes; when facilities are estimated to have a life materially in excess of the period that is used for tax purposes, this longer period should be used for book purposes.

Studies undertaken by the American Institute of Accountants determined that a great many companies acquiring emergency facilities during the war period used depreciation schedules for accounting purposes that followed those permitted for tax purposes, regardless of the nature and the use of the facilities. As a result, statements for such companies failed to display properties of substantial usefulness and worth. The absence of such property values was accompanied, in turn, by the failure to record depreciation on such assets even though they were in use and contributed to the production of revenue. This failure to display property items on the balance sheet was accompanied by what might be considered to be an even greater fault, income measurement distortion. In November, 1946, the Committee on Accounting Procedure issued Bulletin No. 27 on "Emergency Facilities" taking issue with the premature allocation of facility costs and recommending the restoration of costs improperly written off and the subsequent recognition of depreciation on properties that continue to serve a useful business purpose. This position is consistent with that taken by the Institute for the correction of depreciation allocations made in error.

A second bulletin on this subject, Bulletin No. 42, was issued in 1952, recommending the recognition of depreciation for accounting purposes in terms of asset usefulness when depreciation calculated in the conventional manner differs materially in amount from that allowed for income tax purposes. In this bulletin the Committee on Accounting Procedure commented as follows with respect to the differences between accounting procedures and tax procedures:

Sound financial accounting procedures do not necessarily coincide with the rules as to what shall be included in "gross income," or allowed as a deduction therefrom, in arriving at taxable net income. It is well recognized that such rules should not be followed for financial accounting purposes if they do not conform to generally accepted accounting principles. However, where the results obtained from following income tax procedures do not materially differ from those obtained where generally accepted accounting principles are fol-

lowed, there are practical advantages in keeping the accounts in agreement with the income tax returns.<sup>1</sup>

### CHANGES IN ASSET COST THROUGH BETTERMENTS

During the life of plant and equipment items, depreciation charges may require revision as a result of additional expenditures that are made in connection with these properties.

Expenditures that are considered to improve property items are recorded as increases in the asset cost. Such additional costs must be considered in recording depreciation in subsequent periods. For example, assume the acquisition for \$10,000 of a machine with an estimated life of 20 years. After use for 15 years, an expenditure of \$2,000 is made that improves the machine but does not lengthen its life. The betterment, limited to the remaining life of the asset, has a service life of 5 years. The entry to record the expenditure is:

Machines.....	2,000
Cash .....	2,000

Annual depreciation is now calculated as follows:

Original asset:	\$10,000 ÷ 20	\$500
Betterment:	2,000 ÷ 5	400
		—
Total annual depreciation		\$900

If expenditures serve to rehabilitate certain assets and to increase their service life beyond original estimates, the asset valuation account instead of the asset account is preferably charged with the cost of rehabilitation, and a new depreciation rate is calculated on the property item. To illustrate, assume in the previous example that the expenditure did not represent an enlargement or improvement of the asset but simply prolonged its service life by 3 years. The entry to record the rehabilitation is made as follows:

Allowance for Depreciation of Machines.....	2,000
Cash.....	2,000

Depreciable cost for the remaining life of the asset is as follows:

Asset cost.....	\$10,000
Less allowance for depreciation, \$7,500, reduced by a debit of \$2,000 as a result of asset rehabilitation.....	5,500

Asset book value to be written off during the next 8 years (5+3).....	\$ 4,500
---	----------

Annual depreciation is now calculated: \$4,500 ÷ 8, or \$562.50

<sup>1</sup>*Accounting Research Bulletin No. 42*, "Emergency Facilities: Accounting for Depreciation and Taxes under Certificates of Necessity," November, 1952 (New York: American Institute of Accountants), p. 308.

Expenditures that replace certain asset units call for entries to recognize acquisition of the new unit and retirement of the old. The effect of such asset changes must be considered in calculating subsequent depreciation. For example, assume that a machine that cost \$10,000 has an estimated life of 10 years. After six years an important machine part, estimated to represent 25% of the original asset cost, requires replacement. The replacement cost of the new part is \$2,800 and the life of the part is expected to terminate with that of the machine; \$250 is recovered on the disposal of the old part. The foregoing calls for an entry to retire the old part as follows:

Cash	.	250	
Allowance for Depreciation of Machines		1,500	
Loss on Machine Part Retirement		750	
Machines			2,500
Loss on asset retirement:			
Asset cost estimated at 25% of \$10,000, or	\$2,500		
Depreciation, 6/10 of cost	1,500		
Asset book value	\$1,000		
Proceeds from sale	250		
Loss	\$ 750		

The new part is recorded as follows:

Machines	2,800	
Cash		2,800

Annual depreciation is now calculated as follows:

Original asset. $(\$10,000 - \$2,500) \div 10$	\$ 750
New part: $\$2,800 \div 4$	700
Total annual depreciation	\$1,450

If it had been assumed originally that the machine part would require replacement during the machine lifetime, a higher depreciation rate could have been applied to the machine part; the loss on asset retirement would then have been more accurately recognized in the form of higher periodic depreciation charges.

## DEPARTURES FROM COST

In Chapter 1 it was stated that the matching process is fundamental in all accounting activity. It was further stated that this process consists of the measurement of revenue and the matching against revenue of the costs applicable thereto. Costs considered to be related to future revenues were held back from current recognition and deferred for future application. Certain exceptions to this practice are generally accepted. Thus current asset items, such as receivables, marketable securities, and inventories,

are reported at less than cost when it is felt that realization of these assets may be limited to the smaller amounts; long-term investments, such as investments in stocks and bonds, are reported at less than cost when declines in the values of these assets are significant and appear to be permanent; other long-term assets that arise from donation or discovery are reported at their fair market values, valuations that provide a basis for satisfactory asset accountability as well as income measurement. The introduction of appraisal values in the accounts for property items whose replacement values have changed materially since date of acquisition represents a further departure from the cost approach; but this practice is considered acceptable only under exceptional circumstances and then only if full information is made available on the accounting statements concerning the nature and the extent of the departure from accounting in terms of cost. The problems relating to the use of appraisal values in the accounts are considered in the remaining pages of this chapter.

#### **REPLACEMENT VALUES FOR ASSETS**

During the early 1930's, companies found that plant values had experienced a severe fall within a relatively short period. In addition, the prices obtained for products sold had fallen to the point where they were insufficient to cover production costs if these included depreciation charges based on the original asset costs. Then, during the 1940's and early 1950's, companies found a steady and significant growth in plant values. This rise was occasioned by a general increase in prices and in some cases by improvements in adjoining areas that increased the value of plant locations. In periods of both falling and rising price levels, proposals have been made that current price levels be recognized in the valuation of property items and in the assignment of charges for their use.

*Price Level Declines.* When property values decline and recovery to previous levels is not expected, arguments in support of the recognition of such "permanent" declines take the following form: price decline and the ability to replace assets at materially lower prices gives rise to a loss that may be compared to that arising from a fire or other casualty; to continue to report property items in the accounts at amounts that exceed the value of the utilities afforded thereby is to permit the distortion of both financial position and income measurements. Recognition of lower replacement values on the records is advocated as a conservative measure.

But those who support the continued use of cost claim that to adjust plant costs for price declines is to engage in normalizing costs and peri-

odic income. This group maintains that cost is the investment in the future; the full burden of costs must be assigned to future revenues in arriving at profit or loss that measures the sum total of management's activities.

Accountants on the whole have supported the continued use of cost in periods of price decline. There is agreement that cost reductions are appropriate when it is clear that these costs will not be recovered through future activities; however, the revision of property items simply in recognition of a declining price level is not generally encouraged.

*Price Level Advances.* When an increase in the general price level is viewed as permanent, the argument is made, as in the case of declines, that changes in the accounts must be recognized if financial position and charges to revenue are not to be distorted. Recognition of changed values is supported as a measure for making accounting reports more informative and useful.

Here, too, the answer by accountants on the whole has been that adherence to cost normally provides the most acceptable basis for the development of accounting reports. It is recognized that there may be occasions when special circumstances, such as the discovery of valuable resources or other special enhancement of values, call for the recognition of higher values as a means of assuring full property accountability and dependable income measurements; but the recognition of increased plant value in the accounts simply in response to an increasing price level is definitely discouraged.

*Opinions on the Departure from Cost.* Both the Committee on Accounting Procedure of the American Institute of Accountants and the Executive Committee of the American Accounting Association have recommended as a general practice the disregarding in the accounts of changes in price levels. The Committee on Accounting Procedure in Accounting Research Bulletin No. 5 has stated:

Accounting for fixed assets should normally be based on cost, and any attempt to make property accounts in general reflect current values is both impracticable and inexpedient.<sup>1</sup>

It states further:

The view expressed . . . relates to accounts which form the basis for reports to stockholders and similar statements. Manifestly, there is no objection to showing estimated present values, nor to the computation of depreciation on that basis, for internal administrative purposes . . . From the standpoint of the enterprise, cost to the cor-

<sup>1</sup> *Accounting Research Bulletin No. 5, "Depreciation on Appreciation,"* April, 1940, (New York: American Institute of Accountants), p. 37.

poration is not of controlling significance, but, to the corporation itself, cost is the proper foundation of its accounting.<sup>1</sup>

The American Accounting Association expressed the following opinion in its Statement of Accounting Concepts and Standards in 1948:

There should be no departure from the cost basis to reflect the assets of an enterprise at amounts higher than unassigned cost. Continuous replacements of assets, frequently of a type different from those replaced, and the practical difficulty of measuring replacement value, emphasize the need for a historical record in terms of the consistent, objective basis of cost.<sup>2</sup>

#### USE OF APPRAISAL DATA

With material differences in cost and current replacement or reproduction costs, there is no objection to reporting the current values on the statements by means of parenthetical remarks or special notes. When it is considered appropriate for the accounts to reflect such changed values, both asset balances and capital accounts require adjustment. In either case, the values that are indicated should be supplied by reliable independent appraisal. Furthermore, the published statements should offer full information concerning the source of the values other than cost as well as the authority for the use of such values.

Appraisals by engineering or appraisal firms normally afford information for individual assets concerning:

- (1) *Replacement value*, which is the present amount required to reproduce the asset new.
- (2) *Sound value*, which is the present replacement value less depreciation to date based upon such value.
- (3) *Condition per cent*, which is the present percentage relationship of sound value to replacement value.

Companies may authorize the appraisal of properties for purposes other than use in the accounts. For example, replacement values may be sought for special use or reporting in connection with credit, tax, insurance, sale, or consolidation matters. On the other hand, appraisal data may be sought for use in the accounts either: (1) to correct account balances when the relationship of sound values to replacement

<sup>1</sup>*Ibid.*, p. 39.

<sup>2</sup>*Accounting Concepts and Standards Underlying Corporate Financial Statements*, 1948 Revision (Urbana: American Accounting Association, p. 2). It should be noted that the American Accounting Association admitted at this time that a "marked, permanent change in price levels" might impair the usefulness of statements reporting costs, and suggested that accounting concepts and standards appropriate for the reflection of a drastic and permanent change in prices would need to be developed in the event of such a change. Reference was made in Chapter 1 to the recommendations of the Association in 1952 for the preparation of "common dollar statements" as interpretative supplements to the reports prepared in the conventional manner.

values suggests that there has been past overdepreciation or underdepreciation of cost; or (2) to bring appraisal values into the accounts.

To illustrate the use of appraisal data as a basis for simply correcting the accounts and as a basis for bringing asset and valuation accounts into agreement with current replacement values, assume the following: A property item was acquired at a cost of \$60,000 and is being depreciated on an 8-year life. After use for 4 years, the property is appraised at a replacement value of \$100,000 and condition per cent of 60, or a sound value of \$60,000. Cost and appraisal data follow:

	PER BOOKS	PER APPRAISAL
Asset basis	\$60,000	\$100,000
Accrued depreciation	30,000	40,000
Depreciated value	\$30,000	\$ 60,000

The appraisal is regarded as indicating that past depreciation recognized by the company was excessive and that the life of the asset should be considered to be 10 years instead of 8 (the appraisal indicates a 40% asset decline in 4 years or depreciation at the rate of 10% per year). A correcting entry, then, is appropriate to reduce the asset valuation account in bringing cost data up to date.

It should be observed that disagreement between book and appraisal depreciation would not always suggest a correction in the depreciation reported on the books. Appraisal values may reflect physical deterioration primarily; depreciation for accounting purposes is systematic cost allocation in recognition of physical as well as functional decline. It will be assumed, however, in the examples in this chapter that differences in appraisal and book depreciation may be regarded as indicating errors in prior depreciation.

If higher replacement values are to be reflected in the accounts, appropriate correction for overdepreciation in terms of cost would still be made; appraisal increases would then be applied to the corrected cost base in bringing account balances into agreement with appraisal figures.

It was observed previously that changes in the estimated asset life and the correction of depreciation for past periods may affect asset book values and subsequent depreciation charges for income tax purposes. Changes from costs to replacement values, however, as well as any changes in depreciation charges identified with asset increases or decreases arising from appraisals, must be disregarded for tax purposes. For income tax purposes the basis for depreciation continues to be

original cost; the basis for computing gain or loss on the ultimate disposal of the asset is the asset book value stated in terms of cost.

**ASSET DEVALUATION  
RECORDED IN THE  
ACCOUNTS**

A write-down of plant and equipment cost reduces both the property item and the earned surplus; the asset is credited and a nominal account or Earned Surplus is debited, depending upon whether the charge is to be reflected as an extraordinary charge on the income statement or as an earned surplus reduction on the surplus statement. In the case of depreciable assets, devaluation generally affects both asset and related valuation account balances. To illustrate the process of property write-downs, assume that a company reports buildings on its books at cost less depreciation for prior years of 30%, as follows:

Buildings . . . . .	\$500,000
Allowance for Depreciation of Buildings . . . . .	150,000
Depreciated Value . . . . .	\$350,000

An appraisal establishes a present reproduction cost of the buildings, new, at \$300,000, and a sound value at \$210,000, or 70% of reproduction cost. Recognition in the accounts of the appraisal calls for a reduction in the buildings account to \$300,000 and a reduction in the valuation account to 30% of \$300,000, or \$90,000. The entry to give effect to the revaluation follows:

Allowance for Depreciation of Buildings . . . . .	60,000	
Loss on Building Revaluation (or Earned Surplus) . . . . .	140,000	
Buildings . . . . .		200,000

However, assume that the appraisal establishes a reproduction cost of \$300,000 but a sound value of \$180,000, indicating that properties are actually 40% depreciated. Here appraisal suggests both incorrect depreciation in the past as well as a change in the replacement value of the assets. This information can be recognized in the accounts by (1) an entry to correct the valuation account to 40% of cost and (2) an entry to reduce the asset account and the valuation account to a \$300,000 replacement basis. Since the correction in past depreciation and the asset devaluation both affect earned surplus, a single entry is possible in recording the two factors, as follows:

Allowance for Depreciation of Buildings . . . . .	30,000	
Loss on Building Revaluation (or Earned Surplus) . . . . .	170,000	
Buildings . . . . .		200,000

Depreciation after appraisal is based upon the revised value of the asset and the estimated remaining years of its life. If the remaining life is estimated at 30 years, the depreciation rate is 1/30 of 60%, the undepreciated balance of the asset, or 2%. This rate applied to the

revised asset value, \$300,000, results in annual depreciation of \$6,000. The same figure is obtained by computing annual depreciation at  $1/30$  of \$180,000, the asset book value after revaluation.

### **CORPORATE READJUSTMENT OR THE QUASI-REORGANIZA- TION**

Assume the investment in plant and equipment at a level that does not make possible a profit from operations under current conditions; assume further a deficit from previous operations or an earned surplus balance that is insufficient to absorb a reduction in property items warranted by current conditions and necessary if the company is to be able to report satisfactory operations in future periods. Conditions here call for a restatement of property items and, because of the inability of earned surplus to absorb the asset reduction, for a restatement of paid-in capital. Such a restatement, providing in effect for a "fresh start" accounting-wise on the part of the corporation, is called a *quasi-reorganization* or *corporate readjustment*. A restatement as indicated does not require recourse to the courts as would be the case under formal reorganization procedures; there is no change in the legal corporate entity or interruption in business activity.

To illustrate the nature of the quasi-reorganization, assume that the Billings Corporation has suffered losses from operations for some time and that revenues both current and anticipated appear to be insufficient to cover costs arising from investments made in an earlier high-price period. With a reduction in plant and equipment items to present replacement levels and the decreased depreciation charges to follow, it is felt that a profitable operating level may be regained; the elimination of an existing deficit is also desirable in the readjustment process. A balance sheet for the company just prior to the corporate readjustment follows:

#### **BILLINGS CORPORATION BALANCE SHEET JUNE 30, 19 -**

Current assets . . . . .	\$ 250,000	Liabilities . . . . .	\$ 400,000
Plant and equipment . . . . .	1,000,000	Capital:	
		Capital stock,	
		100,000 shares,	
		par \$100. . .	\$1,000,000
		Less: Deficit . . . . .	150,000
			850,000
Total assets . . . . .	<u>\$1,250,000</u>	Total liabilities and capital	<u>\$1,250,000</u>

The readjustment is to be accomplished as follows:

- (1) Plant and equipment is to be reduced to a value of \$750,000.

- (2) Capital stock is to be reduced to a par of \$50, \$500,000 in capital stock thus being converted into paid-in surplus.
- (3) The deficit of \$400,000 (\$150,000 as reported on the balance sheet, increased by \$250,000 arising from the asset write-down) is to be applied against the surplus arising from recapitalization.

Entries to accomplish the foregoing follow:

(1) Earned Surplus	250,000	
Plant and Equipment		250,000
(2) Capital Stock (100,000 shares, par \$100)	1,000,000	
Capital Stock (100,000 shares, par \$50)		500,000
Surplus from Recapitalization		500,000
(3) Surplus from Recapitalization	400,000	
Earned Surplus		100,000

The balance sheet after corporate readjustment appears as follows:

#### BILLINGS CORPORATION

##### BALANCE SHEET

JUNE 30, 19

Current assets	\$ 250,000	Liabilities	\$ 400,000
Plant and equipment.	750,000	Capital stock 100,000 shares, par \$50	500,000
		Surplus from recapitaliza- tion	100,000
Total assets	\$1,000,000	Total liabilities and capital	\$1,000,000

Subsequent earnings of the company should be reported in a *dated earned surplus* account; on future balance sheets, earned surplus dated as of the time of account readjustment will inform readers of the date of corporate readjustment and the fresh start relative to earnings recognition and accumulation.

The Committee on Accounting Procedure in Accounting Research Bulletin No. 3 has recommended that a company that elects to bring about a legitimate restatement of its assets, capital stock, and surplus through readjustment, thus availing itself of permission to relieve future income or earned surplus of charges that should otherwise be made against these, should meet the following conditions:

- (1) It should make a clear report to stockholders of the proposed restatements and should obtain their formal consent.
- (2) It should present a fair and conservative balance sheet as at the date of the readjustment, in which assets and liabilities should be so stated that no artificial credits will arise from realization of the assets or discharge of the liabilities.

- (3) It should make a reasonably complete readjustment of values in order that there will be no continuation of the circumstances that justify charges to invested capital.<sup>1</sup>

**ASSET APPRECIATION  
RECORDED IN THE  
ACCOUNTS**

When an appraisal indicates plant values in excess of cost and this appreciation is to be entered on the books, both the property and the capital balances are raised. The asset increase, while recognized on the books, is still unrealized; the capital increase then, should be designated as revaluation surplus, capital arising from the recognition of an appraisal increase.

To illustrate the process of recording asset appreciation, assume that land, cost \$50,000, is raised to an appraised value of \$80,000. This may be accomplished by the following entry:

Land .....	30,000	
Surplus from Revaluation of Land .....		30,000

Land would be shown on the balance sheet at its present appraised value, \$80,000. Reference to the original cost of the land could be made on the statement parenthetically. The revaluation surplus should not be merged with other surplus balances but should be reported separately in the capital section of the balance sheet so that the reader of the statement may be fully aware of the unrealized capital element.

If the land is sold at a later date for \$75,000, \$25,000 of the recorded appreciation will have been realized. The gain is recognized and the revaluation surplus element is canceled by the following entry:

Cash .....	75,000	
Surplus from Revaluation of Land .....	30,000	
Land .....		80,000
Gain on Sale of Land (or Earned Surplus) .....		25,000

The ultimate result of the recorded appreciation and the subsequent sale is an increase in earned surplus of \$25,000. All evidence of the appraisal is canceled, and the account balances are the same as though the asset had been carried at its cost, \$50,000, and subsequently sold at a profit.

When a depreciable asset is to be written up, the effects upon the asset account balance and the related valuation account balance must be considered. The appraisal may indicate both a correction in past depreciation and an increased asset replacement value. However, unlike the case of asset devaluation where the effects of both the correction and the revaluation are reflected in earned surplus, in the

<sup>1</sup>*Accounting Research Bulletin No. 3*, "Quasi-Reorganization or Corporate Readjustment — Amplification of Institute Rule No. 2 of 1934," September, 1939 (New York: American Institute of Accountants), pp. 25 and 26.

case of asset appreciation any correction in depreciation affects earned surplus while the asset increase gives rise to revaluation surplus. Entries, then, are required to record (1) the correction in depreciation on the basis of cost and (2) the appraisal increase in the asset as well as in the allowance for depreciation. While the appraisal increases may be reported directly in the asset and the valuation accounts, it is normally desirable to report these increases in separate accounts. Cost data are thus preserved and are available in the preparation of income tax returns where the effects of appraisals must be ignored; subsequent depreciation entries that require information concerning both cost and appraisal increases can be more conveniently prepared.

To illustrate the foregoing, assume the following information with respect to a building:

<u>COST</u>	<u>ESTIMATED LIFE IN YEARS</u>	<u>YEARS USED</u>	<u>ALLOWANCE FOR DEPRECIATION</u>
\$200,000	50	20	\$80,000

At this time an appraisal of the asset shows it to have a replacement value of \$320,000 and a sound value of only \$160,000, the asset being 50% depreciated. The appraisal suggests the following changes:

	<u>COST</u>	<u>TOTAL ESTIMATED LIFE IN YEARS</u>	<u>LIFE IN YEARS TO DATE</u>	<u>ALLOWANCE FOR DEPRECI- ATION</u>
	\$200,000	50	20	\$ 80,000
Correction relating to de- preciation recorded in prior years . . . . .		- 10		+20,000
Cost balances as corrected	\$200,000	40	20	\$100,000
Revaluation . . . . .	+120,000			+ 60,000
Balances as increased by appraisal . . . . .	\$320,000	40	20	\$160,000

Entries to record the appraisal are required as follows:

<u>Transaction</u>	<u>Entry</u>
(1) To correct allowance for depreciation to 50% of cost as indicated by appraisal.	<p>Corrections in Profits of Prior Years — Understate- ment of De- preciation (or Earned Surplus)... 20,000 Allowance for De- preciation of Building..... 20,000</p>

Transaction	Entry
(2) To increase asset and depreciation allowance to a replacement basis of \$320,000 as indicated by appraisal.	<div>Building Increase per Appraisal 120,000</div> <div>Allowance for Depreciation of Building – Increase per Appraisal 60,000</div> <div>Surplus from Revaluation of Building 60,000</div>

The asset book value has changed as follows:

	BEFORE APPRAISAL	CHANGES	AFTER APPRAISAL
Building	\$200,000	+ \$120,000	\$320,000
Allowance for Depreciation	80,000	+ \$20,000 + \$60,000	160,000
	\$120,000		\$160,000

While the asset was increased from \$120,000 to \$160,000, it should be noted that the appraisal indicated inadequate depreciation on the basis of cost in past periods of \$20,000. Since earnings of past periods have been overstated, a reduction in earned surplus is required. The appreciation that is taken into the accounts is actually \$60,000, or asset book value after correction of \$100,000 raised to a sound value of \$160,000. The latter increase is separately reported as revaluation surplus.

### DEPRECIATION ON ASSET APPRECIATION

When asset appreciation is recorded, it may be recognized in the calculation of periodic depreciation, profit and loss being developed in terms of appraisal costs. On the other hand, depreciation may continue to be recognized in terms of original cost, appraisal data finding expression only on the balance sheet. Both procedures are encountered in practice and arguments are advanced in support of each procedure.

Those supporting charges in terms of appraisal values feel that a company is obliged to report charges on the income statement consistent with the representations for depreciable properties made on the balance sheet. This is the position taken by the American Institute Committee on Accounting Procedure. The Committee states:

... a company which has made representations as to an increased value of plant cannot afterwards account for depreciation and income as if it had never made such representations. When a company has made representations in its balance sheet as to an increased value of its property and others have bought its securities upon those representa-

tions, it is not unreasonable to interpret the formal adoption of the larger amount for plant as implying an intention on the part of the company to maintain that larger amount of invested capital intact by proper charges against income. To implement such intention it is necessary that the company charge income with depreciation on the larger values represented.<sup>1</sup>

It is also maintained in support of the position of appraisal depreciation that asset replacement dollars must be matched against current revenues in arriving at meaningful income measurements, that comparative evaluations of profit and loss are possible only if they reflect current costs as well as current revenues, and that replacement value accounting offers management a better guide to sales, dividend, and other operating policies.

Despite these arguments, there are many who insist that depreciation in terms of cost is appropriate even after the recognition of appraisal increases in the accounts. This group maintains that the use of appraisal values should be limited to balance sheet presentations. Expense, it is insisted, can arise only from expenditures; it is the dollar cost and not the dollar purchasing power that must be matched against dollars earned in arriving at net income. Depreciation accounting, this group maintains, should not be related to the problem of asset replacement; depreciation calls for the allocation of past costs, not for the recognition of future costs. Asset replacement is a separate problem that calls for separate financial planning. Replacement expenditures at a higher level will be made on the assumption that future revenues will recover such future outlays; replacement considerations, therefore, should not be permitted to distort current measurements.

Practical considerations, too, serve to support the cost approach to depreciation. When depreciation is recorded in terms of cost, the books show the depreciation actually allowable for income tax purposes. When depreciation is recorded on the basis of appraisals, restatement of these figures to cost is required in the preparation of tax returns.

*Recording Depreciation on Cost.* If depreciation is to be calculated on original cost, the income statement reports operations on a cost basis, while only the balance sheet reflects appraisal values. Depreciation is recorded in the usual manner, an expense account being debited and an allowance account being credited for depreciation on cost. A second entry is required, however, to recognize the shrinkage that has taken place in the asset appraisal element. Both the asset increase arising from the appraisal and the revaluation surplus must be reduced.

<sup>1</sup>*Accounting Research Bulletin No. 5*, "Depreciation on Appreciation," April, 1940 (New York: American Institute of Accountants), p. 38.

This is accomplished by a debit to the revaluation surplus account and a credit to the appraisal allowance for depreciation account. The writing off of asset cost is thus accompanied by the writing off of the appraisal increase.

To illustrate, assume that at the beginning of 1953, equipment acquired on January 1, 1950, is shown on the books at cost, \$100,000, less an allowance of \$37,500 representing depreciation at  $12\frac{1}{2}\%$  a year, or at a book value of \$62,500. An appraisal on January 2, 1953, sets the replacement value of the equipment at \$150,000 and its present depreciated value at 70% of this amount, or \$105,000. Depreciation of 30% in 3 years as indicated by the appraisal suggests correction of depreciation on the asset to a 10-year basis. The following entries are required:

Transaction	Entry
<b>JANUARY 2, 1953</b>	
(1) To decrease allowance for depreciation to 30% of cost as indicated by appraisal.	Allowance for Depreciation of Equipment.. 7,500 Corrections in Profits of Prior Years — Overstatement of Depreciation (or Earned Surplus).... 7,500
(2) To increase asset and depreciation allowance to a replacement basis of \$150,000 as indicated by appraisal.	Equipment—Increase per Appraisal . . . . 50,000 Allowance for Depreciation of Equipment Increase per Appraisal . . . . . 15,000 Surplus from Revaluation of Equipment 35,000
<b>DECEMBER 31, 1953</b>	
(1) To record depreciation on cost of \$100,000 at corrected rate of 10% as indicated by appraisal.	Depreciation of Equipment..... 10,000 Allowance for Depreciation of Equipment . . . . . 10,000
(2) To reduce appraisal increase of \$50,000 at rate of 10% consistent with reduced book value of asset at cost.	Surplus from Revaluation of Equipment.... 5,000 Allowance for Depreciation of Equipment—Increase per Appraisal . . . . . 5,000

At the end of 1959, assuming that the asset is retired, the allowance for depreciation on cost is offset against the asset account and the allowance for depreciation on the appraisal increase is applied against

the asset appraisal increase account, thus closing all the accounts relating to the property item.

*Recording Depreciation on Appraised Values.* When depreciation is based on appraised values that are higher than cost, operating expenses are overstated and net income is understated from a cost point of view. If depreciation is to be recorded on appraised values, periodic transfers from the appraisal surplus account to the earned surplus account may be made in order to correct earned surplus for the profit understatement.

To illustrate, assume the same facts as in the preceding illustration. The entries to record the revaluation are the same. Periodic entries to record depreciation may be made as follows:

Transaction	Entry						
DECEMBER 31, 1953							
(1) To record depreciation on appraised value of \$150,000 at corrected rate of 10% as indicated by appraisal.	<table> <tr> <td>Depreciation of Equipment . . . . .</td><td>15,000</td></tr> <tr> <td>    Allowance for Depreciation of Equipment . . . . .</td><td>10,000</td></tr> <tr> <td>    Allowance for Depreciation of Equipment — Increase per Appraisal . . . . .</td><td>5,000</td></tr> </table>	Depreciation of Equipment . . . . .	15,000	Allowance for Depreciation of Equipment . . . . .	10,000	Allowance for Depreciation of Equipment — Increase per Appraisal . . . . .	5,000
Depreciation of Equipment . . . . .	15,000						
Allowance for Depreciation of Equipment . . . . .	10,000						
Allowance for Depreciation of Equipment — Increase per Appraisal . . . . .	5,000						
(2) To reduce appraisal increase of \$50,000 at rate of 10%, consistent with reduced book value of asset at cost, and to correct earned surplus for understatement of income calculated after depreciation on appraised values.	<table> <tr> <td>Surplus from Revaluation of Equipment . . . . .</td><td>5,000</td></tr> <tr> <td>    Earned Surplus . . . . .</td><td>5,000</td></tr> </table>	Surplus from Revaluation of Equipment . . . . .	5,000	Earned Surplus . . . . .	5,000		
Surplus from Revaluation of Equipment . . . . .	5,000						
Earned Surplus . . . . .	5,000						

The first entry records depreciation on the appraised value, the allowance for depreciation on cost being credited for depreciation on cost and the allowance for depreciation on the appraisal increase being credited for depreciation on the appraisal increase. This entry results in an expense overstatement of \$5,000, with a corresponding understatement of net income in terms of original cost. The second entry effects a transfer of the amount of the income understatement from the revaluation surplus account to Earned Surplus. The surplus from revaluation balance then reflects the actual appraisal increase in the reduced book value of the asset, while Earned Surplus reports earnings based upon actual costs. When the asset is fully depreciated, the entire balance in the appraisal surplus account will have been transferred to Earned Surplus by the periodic entries. Upon disposal of the asset,

cost and appraisal allowances for depreciation are applied against their respective asset accounts.

The appraisal of an asset may indicate that no revision in the estimate of its service life is needed. No correction then is required in the asset allowance account when the appraisal is recorded, and the original depreciation rate is applied to costs and appraisal values in recording depreciation thereafter.

**SURPLUS APPROPRIATIONS TO ASSURE ASSET REPLACEMENT AT HIGHER PRICE LEVEL**

While it is proper in accounting for appraisals to show an earned surplus balance based on depreciation at cost, regardless of whether cost or appraisal depreciation is reported on the income statement, the practical problem of funds to take care of asset replacement at a higher price level still exists. In order to assure funds for the replacement of assets at a higher price level, the board of directors may authorize the regular appropriation of surplus to withhold profits from distribution as dividends. When the cost method for depreciation is used, entries are made for the appropriation of earned surplus following the transfer of net income to the latter account. When the appraisal method of depreciation is used, net income is transferred to earned surplus and this is followed by the transfer from revaluation surplus to earned surplus to correct these balances; appropriation of earned surplus can then be recorded as under the cost method. Surplus appropriations may ultimately be returned to earned surplus. On the other hand, assuming that funds provided by past profits are actually applied to the replacement of assets at higher costs, appropriated surplus balances may be carried forward indefinitely or they may be used as a basis for a stock dividend increasing the permanent capital of the business to match the increased dollar investment in plant and equipment. Appropriations of earned surplus originate with the board of directors; the disposition of such balances is likewise a matter to be resolved by the board of directors. Entries are made in the accounts in accordance with the action taken by the board.

**APPRAISAL VALUES ON THE BALANCE SHEET**

When appreciation is taken up on the books, the balance sheet should report both asset costs and appraisal increases. Data for equipment in the preceding illustration may be shown on the balance sheet prepared on December 31, 1953, as shown on the following page. The revaluation surplus of \$30,000 is reported in the balance sheet capital section.

	COST	INCREASE PER APPRAISAL	BOOK VALUE AS APPRAISED
Equipment	\$100,000	\$50,000	\$150,000
Less: Allowance for depreciation	40,000	20,000	60,000
Balance	\$ 60,000	\$30,000	\$90,000

### DISPOSAL OF DEPRECIABLE PROPERTIES ON WHICH APPRECIATION HAS BEEN RECORDED

Disposal of a depreciable asset on which appreciation has been recognized in the accounts calls for cancellation of the cost and appraisal increase balances relating to the property item as well as the revaluation surplus balance. Sale of the asset reported in the section above for \$65,000, for example, is recorded as follows, a gain of \$5,000 emerging from the sale of the asset whose depreciated cost was \$60,000:

Cash	65,000
Allowance for Depreciation of Equipment	40,000
Allowance for Depreciation of Equipment—Increase per Appraisal	20,000
Surplus from Revaluation of Equipment	30,000
Equipment	100,000
Equipment—Increase per Appraisal	50,000
Gain on Sale of Equipment (or Earned Surplus)	5,000

Examples in the preceding sections illustrated the procedures that are followed when appraisal increases are reported in separate accounts cost data thus being preserved in the original account balances. It may be observed that in the case of asset devaluations it would be possible to follow similar accounting, reductions in asset and asset valuation accounts being reported by means of separate offset or negative account balances, and original asset and valuation accounts continuing to reflect cost.

### DEPRECIATION AND INCREASING REPLACEMENT COSTS

The sharp increase in the price level in recent years has brought demands that accountants make basic changes in accounting for depreciation on plant and equipment. In general, such demands call for the recognition of depreciation on the income statement in terms of replacement values. This, it is claimed, will provide a "more accurate" statement of a company's real earnings, and will also provide for the retention by the business of resources that are required to replace productive facilities.

The Committee on Accounting Procedure of the American Institute in a letter to members of the Institute dated October 14, 1948, indicated

that it had given extensive consideration to this problem and had concluded that, at that time, basic changes in accounting for plant and equipment were neither practicable nor desirable. The Committee felt, however, that all parties using reports should be made aware of the need for a business to retain sufficient earnings if it was to be able to replace productive facilities at current prices. This information could best be supplied, in the view of the Committee, by financial schedules, explanations, and footnotes accompanying financial statements prepared in their conventional forms.

In an earlier bulletin on depreciation, Bulletin No. 33, issued in December, 1947, the Committee had taken a similar position. There, it had suggested that the contemplation of property replacements at a higher price level calls for the periodic appropriation of earnings and not for the recognition of higher depreciation charges. In support of cost depreciation, the Committee stated:

. . . accounting and financial reporting for general use will best serve their purposes by adhering to the generally accepted concept of depreciation on cost, at least until the dollar is stabilized at some level. An attempt to recognize current prices in providing depreciation, to be consistent, would require the serious step of formally recording appraised current values for all properties, and continuous and consistent depreciation charges based on the new values. Without such formal steps, there would be no objective standard by which to judge the propriety of the amounts of depreciation charges against current income, and the significance of recorded amounts of profit might be seriously impaired.

It would not increase the usefulness of reported corporate income figures if some companies charged depreciation on appraised values while others adhered to cost. The committee believes, therefore, that consideration of radical changes in accepted accounting procedure should not be undertaken, at least until a stable price level would make it practicable for business as a whole to make the change at the same time.<sup>1</sup>

## QUESTIONS

1. What alternative procedures may be followed in the accounts upon determining that depreciation has been incorrectly estimated in past years? Evaluate each position.
2. How would you recommend that fully depreciated properties be carried in the accounts when they are still being used by the business?
3. What procedures must be followed in reporting income for tax purposes when it is found that: (a) depreciation taken on a property item in past periods was clearly inadequate; (b) the full cost of a property item has been depreciated but the item is continued in use.
4. (a) What are "emergency facilities" acquired under "certificates of necessity"? (b) What objections are made to the recognition of depreciation?

<sup>1</sup>*Accounting Research Bulletin No. 33*, "Depreciation and High Costs," December, 1947 (New York: American Institute of Accountants), p. 268.

tion on the books consistent with the charges that are allowed in arriving at taxable income? (c) What positions have been taken by the American Institute of Accountants relative to (1) facilities fully written off and still in use and (2) facilities currently acquired?

5. Revision of past depreciation and revision of account balances to conform to present appraised values are two aspects of the same problem, the accurate statement of balance sheet data. Do you agree?

6. What are the arguments for and against the recognition of changes in plant and equipment values as a result of changes in the price level?

7. (a) When, in your opinion, would the recognition of a revision downward in the cost of plant items be appropriate? (b) When would you support a revision upward?

8. Distinguish between (a) replacement value and sound value, (b) revaluation surplus and earned surplus, (c) appreciation and devaluation.

9. How will changes from cost to appraisal values affect the charges to be recognized on asset use and disposal for income tax purposes?

10. (a) Define quasi-reorganization. (b) Under what circumstances is such a readjustment considered appropriate?

11. Officials of the Palmer Corporation insist that the appreciation of plant and equipment should be recorded as an increase in paid-in surplus since these assets were acquired originally in exchange for capital stock of the company. Evaluate this argument.

12. Assuming that appreciation is recorded in the accounts, what are the arguments in support of (a) depreciation in terms of cost and (b) depreciation in terms of appraised value?

13. The management of the Taft Corporation suggests that depreciation on assets that have been written up be recorded on the current higher replacement values in order to assure funds for the replacement of such assets at a higher price level. Comment on whether, in your opinion, this practice is necessary and sufficient in meeting the problem.

14. Officers of the X Corporation feel that prices have reached a permanently higher level and thus insist that depreciation on plant and equipment be recognized in terms of higher replacement costs if current earnings are to be accurately stated. Officers of the Y Corporation feel that prices are too high and will ultimately decline and thus insist that current revenue be charged with a part of the cost of assets currently acquired if current earnings are to be accurately stated. How would you reply to each of these proposals?

15. "Should inflation proceed so far that original dollar costs lose their practical significance, it might become necessary to restate all assets in terms of the depreciated currency, as has been done in some countries."

(Committee on Accounting Procedure of the American Institute of Accountants in letter to membership of the Institute, October 14, 1948.)

(a) Give arguments in support of the foregoing proposal. (b) What practices are suggested in meeting the problems of adequate reporting in a period of advanced inflation short of the restatement of account balances?

### EXERCISES

1. Machinery was acquired by the Morrison Co. on July 1, 1950, at a cost of \$30,000, and was depreciated on an estimated 8-year life. On December 31, 1953, in reviewing account balances for purposes of making the adjustments for the past fiscal year, it was determined that the machinery will probably have a 10-year life. (a) Assuming that the correction in past period estimates is to be made by revising depreciation charges for the remaining life of the asset, what entry would be made to record depreciation for 1953? (b) Assuming that account balances are to be corrected for past overdepreciation, what entries would be made to correct the accounts and to record depreciation for 1953?

2. A concrete mixer costing \$5,100 is estimated to have a trade-in value of \$600 at the end of 6 years. When it is 4 years old, it is estimated that it will be useful for 4 more years and will have a scrap value as originally estimated at the end of that time. What are the entries at the end of the fourth year if it is decided to correct the allowance account on the basis of revised estimates and to record depreciation on the revised basis?

3. The Winston Co. purchased land and an old building for \$100,000. The land is estimated to be worth \$80,000; the building is estimated to have a remaining life not to exceed 10 years. The building is used for 5 years and is then completely remodeled at a cost of \$60,000. It is estimated that the building should have a life of 20 years from the date of such remodeling. What entries are made for (a) purchase of land and building, (b) periodic depreciation, (c) cost of remodeling building, and (d) subsequent depreciation.

4. The Brooks Corporation owns office equipment costing \$6,000 that has been used for 5 years and that has been reduced to a book value of \$1,200, the estimated trade-in value at this time. Because of a shortage of new equipment for replacement, the company spends \$1,500 overhauling the old equipment. It is assumed that this overhauling will prolong the life of the equipment by 3 years and that the trade-in value will remain the same. (a) What entry is made to record the expenditure? (b) What is the periodic depreciation subsequent to the expenditure?

5. The Peroff Co. owns machinery acquired at the beginning of 1945 at a cost of \$15,000; the asset is being depreciated on a 15-year basis. At the beginning of 1953, several major worn-out parts are replaced at a cost of \$1,800. Worn parts are estimated to have had a cost basis equivalent to that of replacement parts; \$60 is recovered from their sale as scrap. Give the entries to record (a) depreciation for 1952, (b) the replacement of worn parts at the beginning of 1953, and (c) depreciation for 1953.

6. The Gardner Co. has a certain machine acquired at the beginning of 1948 at a cost of \$150,000 that is being depreciated on a 15-year life. Three operators are required for the machine, each being paid \$3,000 annually. At the beginning of 1953 it is found that a new machine is available that offers the same performance with only two of the above

operators required. The new machine sells for \$50,000 and would have at least a 10-year life. The old machine can be sold for \$5,000. Should the new machine be purchased? Give calculations to support your conclusions.

7. The Williams Co. shows property and proprietorship accounts on January 1, 1953, as follows:

PROPERTY ACCOUNTS		PROPRIETORSHIP ACCOUNTS	
Plant and Equipment	\$1,650,000	Capital Stock (par \$10)	\$1,000,000
Allowance for Depreciation	350,000	Paid-in Surplus	150,000
			-----
			1,150,000
	\$1,300,000	Less: Deficit	200,000
			-----
			\$ 950,000
			-----

On January 5, stockholders authorize that the property accounts be written down to their present worths as indicated by appraisal as follows:

Plant and Equipment	\$1,210,000
Allowance for Depreciation	265,000
	-----
	\$ 945,000
	-----

They further authorize that both the deficit as reported on the books and the asset write-down be applied against existing paid-in surplus, and that any excess be applied against the capital stock account; capital stock outstanding is to be changed from \$10 par to no-par. Give the entries that are required in recording the quasi-reorganization.

8. Machinery, reported on the books at \$30,000 with a depreciation allowance of \$8,000 and an estimated life of 15 years, was appraised on January 1 and found to have a replacement value of \$50,000 new and an estimated total life of 20 years. What entries would be made to record the appraisal?

9. Machinery acquired on January 1, 1948, at a cost of \$300,000 shows a depreciation allowance of \$60,000 on January 1, 1953. On this date engineers and appraisers estimate that the machinery should have a remaining useful life of 25 years and a replacement value new of \$450,000. (a) What entries should be made for the appraisal? (b) What entries should be made to record depreciation on this asset for the year 1953 if operations are (1) charged with cost and (2) charged with appraised values?

10. The Anderson Co. acquired buildings at the beginning of 1945 at a cost of \$100,000 and is depreciating them on a 50-year basis. At the beginning of 1953 an appraisal indicates that the buildings have a replacement value of \$200,000 and a sound value of \$160,000 based on a 40-year life. The appraisal is recorded in the accounts, and depreciation for 1953 is recorded at cost. On January 3, 1954, the buildings are sold for cash, \$175,000. What entries would be made on the books of the Anderson Co. for 1953 and 1954?

## PROBLEMS

**17-1.** The information that follows summarizes transactions of the W.P. Moore Co. relating to the acquisition of a machine for manufacturing:

- Jan. 3, 1944. Purchased machine for \$10,000; was allowed a 5% discount for making cash payment. The machine is estimated to have a 5-year life; residual value is disregarded.
- Dec. 31, 1947. The estimated life of the machine is revised from 5 years to 8 years, and the effect of such revision is recorded in the accounts.
- Jan. 3, 1950. Several major parts of the machine were replaced at a cost of \$2,400; cost of such original parts is estimated at \$2,000. Additional costs of \$1,500 are incurred in overhauling the machine at this point, and it is estimated that replacements and overhauling costs will extend the life of the machine to 10 years.
- July 7, 1953. The machine is scrapped, \$60 being recovered on the salvage.

*Instructions:* Give all the entries that would be made relative to machinery for the period 1944-1953, including the adjustments that are required at the end of each calendar year to recognize depreciation for the year.

**17-2.** Four machines are found in the machine shop of the Wally Manufacturing Co. at the beginning of 1953 as follows:

MACHINE	DATE ACQUIRED	COST INCLUDING INSTALLATION	ESTIMATED USEFUL LIFE	ESTIMATED RESIDUAL VALUE
A	Mar. 5, 1945	\$13,000	10 yrs.	\$1,000
B	April 1, 1947	8,000	10 yrs.	250
C	June 20, 1949	9,200	10 yrs.	500
D	Nov. 6, 1950	12,400	12 yrs.	1,000

During 1953 the following transactions relating to machines in this department are completed:

- Jan. 6. Machine A, which had not been operating satisfactorily, was scrapped. \$800 being recovered on salvage. It was decided that the lives of Machines B and C probably would not exceed 8 years. In revising the depreciation on these machines, it was agreed that their scrap values would be negligible, and hence are to be disregarded.
- Jan. 18. Machine E was purchased for cash at a cost of \$8,000. The new machine is estimated to have a life of 10 years and no scrap value.
- Feb. 11. Machine D was traded in for a larger machine costing \$16,500. Machine D was accepted at a value of \$8,500 for purposes of the trade-in, the balance of the purchase price being paid in cash. The new machine, to be referred to as Machine F, is recorded at \$16,500. It is estimated to have a life of 10 years and a trade-in value of \$1,500 at that time.

*Instructions:* (1) Give the journal entries that are required for 1953, including the adjustments at the end of the year (depreciation is calculated to the nearest month).

(2) Prepare a schedule showing the cost, depreciation allowance balance, and book value of each machine on hand as of December 31, 1953.

**17-3.** The Gardner Co. owns land and buildings that were acquired at a tax auction sale at the beginning of 1945. Account balances for this asset on January 1, 1950, appear as follows:

Land . . . . .		\$15,000
Buildings . . . . .	\$30,000	
Less: Allowance for depreciation . . . . .	7,500	22,500
		<u>\$37,500</u>

An appraisal of this property on this date indicated that the land was worth \$35,000, that buildings had a sound value of \$40,000, and that the asset should have a remaining life from this date of 20 years. A correction is made for depreciation of the past, and the appraisal is recorded in the accounts. On July 1, 1953, the company borrows \$40,000, issuing a 5-year note secured by a mortgage on the property; interest at 6% is payable annually on July 1. On September 1, 1953, the company sells the land and buildings for \$72,500, the purchaser assuming the mortgage note and accrued interest and making payment in cash for the difference.

*Instructions:* (1) Give the entry to record the asset appraisal on January 1, 1950.

(2) Give the entries to record depreciation in the years 1950-1952. (Operations are charged with depreciation at cost.)

(3) Give the entry to record the sale of property on September 1, 1953.

**17-4.** The following account balances relating to plant and equipment appear on the books of the Brooks Corporation on December 31, 1953:

Furniture and Fixtures . . . . .	\$ 45,000	
Allowance for Depreciation of Furniture and Fixtures . . . . .		\$ 37,500
Machinery . . . . .	240,000	
Allowance for Depreciation of Machinery . . . . .		96,000
Buildings . . . . .	600,000	
Allowance for Depreciation of Buildings . . . . .		112,500
Land . . . . .	90,000	

These assets have been carried at cost since their acquisition. With the exception of Building B, completed on January 1, 1949, at a cost of \$300,000, all of the assets were acquired on January 1, 1944. The company now wishes to show plant and equipment items at their present sound value.

An appraisal firm submitted the following report on January 2, 1954:

	REPLACEMENT VALUE (NEW)	PRESENT DEPRECIATED VALUE
Furniture and Fixtures . . . . .	\$ 56,250	\$ 18,750
Machinery . . . . .	270,000	135,000
Buildings: A Constructed 1/1/44 . . . . .	360,000	270,000
B Constructed 1/1/49 . . . . .	330,000	288,750
Land . . . . .	150,000	

*Instructions:* (1) What is the estimated remaining life of the depreciable assets as determined from the appraiser's report?

(2) Prepare journal entries to give effect to appraisal values.

(3) Prepare the plant and equipment section of the balance sheet showing appraisal values.

(4) Give the adjusting entries for depreciation at the end of 1954, assuming that operations are charged with depreciation at cost.

(5) Give the adjusting entries for depreciation at the end of 1954, assuming that operations are charged with depreciation on the appraised values.

17-5. Upon its incorporation on July 1, 1949, the Harbor Manufacturing Co. purchased plant and equipment for cash as follows:

	COST	ESTIMATED USEFUL LIFE
Land	\$ 80,000	
Buildings	150,000	50 years
Machinery and Equipment	240,000	20 years
Office Furniture and Fixtures	15,000	12 years

On January 2, 1951, it was decided that the estimated useful lives used in calculating straight-line depreciation on plant items were excessive. Correcting entries and depreciation calculated on the basis of revised estimated lives as follows were authorized:

	REVISED ESTIMATE OF USEFUL LIFE
Buildings	40 years
Machinery and Equipment	12 years
Office Furniture and Fixtures	10 years

On May 4, 1952, additional machinery was acquired at \$60,000 less a 5% discount for cash payment. Cost of freight in on the machinery was \$2,000. Installation of machinery was completed at the end of June at a cost of \$12,500. This machinery is estimated to have a 10-year life.

At the beginning of 1953, an appraisal of plant assets was made by an outside appraisal firm. While no change was indicated in the lives of the assets, it was ascertained that reproduction costs of assets acquired in July, 1949, had increased by the following percentages:

Land	120%
Buildings	80%
Machinery and Equipment	80%
Office Furniture and Fixtures	50%

It was authorized that such appraisal increases be reflected in the accounts and that depreciation be recorded on the basis of appraisal values.

*Instructions:* (1) Give the journal entries relating to plant and equipment accounts for the period July 1, 1949, to December 31, 1953, including the entries for depreciation that are made at the end of each calendar year. (Assume that no changes are made in appraisal surplus balances at the end of each year, since dividends are to be limited to net income based on appraisal depreciation.)

(2) Give the information that will appear in the plant and equipment and the appraisal surplus sections of the balance sheet prepared as of December 31, 1953.

**17-6.** The Keller Co. shows account balances as follows as of January 1, 1952:

	COST	DATE ACQUIRED	ESTIMATED USEFUL LIFE
Machinery and Equipment. . . . .	\$ 900,000	1/1/42	15 years
Machinery and Equipment. . . . .	420,000	1/1/44	15 years
Buildings. . . . .	2,000,000	1/1/42	40 years
Land. . . . .	500,000	1/1/40	

On this date, January 1, 1952, an independent appraisal company submits the following estimates with respect to asset values and asset lives:

	REPLACEMENT VALUE (New)	ESTIMATED REMAINING USEFUL LIFE
Machinery and Equipment:		
Acquired 1/1/42. . . . .	\$1,500,000	10 years
Acquired 1/1/44. . . . .	500,000	12 years
Buildings . . . . .	3,000,000	40 years
Land. . . . .	800,000	

It is authorized that asset appraisal values be recorded in the accounts at this time. However, depreciation for profit and loss purposes is to be calculated on the basis of original costs with useful lives as revised.

On July 1, 1952, a part of the land with an apportioned cost of \$100,000 and an appraised value of \$160,000 is sold for cash at \$185,000.

At the beginning of 1953, machinery and equipment originally acquired on January 1, 1942, with an apportioned cost of \$30,000 and appraised at a replacement value of \$50,000 as of January 1, 1952, is traded in for new equipment costing \$100,000. \$16,000 is allowed on the old equipment, the balance of the purchase price being paid in cash. The new equipment is recorded at its purchase price and is estimated to have a 20-year life.

*Instructions:* (1) Give the entries relating to plant and equipment for the years 1952 and 1953, including the annual entries for depreciation that are required at the end of 1952 and 1953.

(2) Give the information that will appear in the plant and equipment section and the appraisal surplus section of the balance sheet as of December 31, 1953.

**17-7.** The Cripple Creek Sulphur Company, organized January 1, 1949, was formed to mine, refine, and sell sulphur. To that end it secured a 20-year lease on 500 acres of known sulphur deposits, referred to as Section A, and 500 acres of potential but undiscovered sulphur deposits, referred to as Section B. It was estimated after an engineers' survey that there were 5,000,000 tons of sulphur under Section A at the time of acquisition. Mine reports showed the number of tons taken out by years as follows: 1949, 250,000; 1950, 300,000; 1951, 500,000; 1952, 800,000; 1953, 1,000,000, of which 200,000 tons remained in stock pile.

The following statement is prepared by the company's bookkeeper:

**CRIPPLE CREEK SULPHUR CO.**

**BALANCE SHEET**

DECEMBER 31, 1953

Cash.....	\$ 500,000	Current liabilities, in-	
Receivables .....	300,000	cluding interest and	
Inventory of crude sul-		taxes accrued.....	\$ 150,000
phur at cost of mining		Bonds payable .....	300,000
and extraction (mar-		Capital stock .....	1,000,000
ket value \$200,000)...	180,000	Surplus .....	610,000
Leaseholds—at cost...	600,000	Profit and loss, 1953.....	230,000
Section A \$500,000			
Section B 100,000			
Plant and equipment ..	460,000		
Development—Section A	200,000		
Prospecting—Section B.	50,000		
	-----		-----
	\$2,290,000		\$2,290,000
	-----		-----

This statement is correct and all accounting requirements have been met, except that the company has never provided for amortization or depletion, since, in the words of the company's president, "it had discovered from prospecting more new deposits than it mined." Nor has provision been made for depreciation or obsolescence of plant and equipment acquired January 1, 1949, which are estimated to have a useful life greater than the 20-year period of the leases and a scrap value of \$50,000.

The company had a survey made of Section B by competent engineers. This survey indicated sulphur deposits of 3,200,000 tons on January 1, 1953, which were estimated to have a fair value underground of 11 cents per ton. It was decided to increase the book value of the leasehold, now carried at \$100,000, to that value. It was also decided that the company would charge the operations with depletion on the basis of the increased value, although this would not affect the depletion deductible for tax purposes.

Of the total 1953 production of 1,000,000 tons, 400,000 tons were mined from Section B, all of which were sold in 1953. Prior to December 31, 1953, the bookkeeper had written down developmental costs for Section A by \$50,000, charging this amount to Surplus.

*Instructions:* (1) Prepare journal entries setting up the proper allowances and making necessary adjustments to other accounts.

(2) Prepare a columnar work sheet showing the changes caused by the adjustments.

(3) Prepare a final balance sheet. (A.I.A. adapted)

**17-8.** An old, established corporation, whose books have never before been audited by a public accountant, requests you to make an examination of its accounts as of December 31, 1953.

As as result of your examination, you find the following items included in the accounts:

**Debits:**

Appreciation of land . . . . .	\$ 800,000
Appreciation of buildings . . . . .	200,000
Trade-marks . . . . .	2,000,000
Treasury stock — 5,000 shares (at par) . . . . .	250,000

**Credits:**

Reserve for depreciation on appreciation of buildings . . . . .	\$ 15,000
Capital stock, consisting of 200,000 shares of \$50 each . . . . .	10,000,000
Paid-in surplus arising from acquisition of treasury stock at less than par . . . . .	70,000
Surplus balance, including net earnings plus credits arising from book valuations of trade-marks, appreciation, etc., and after deduction for all dividends paid or declared . . . . .	15,000

You have convinced the officers that the values set up for appreciation of land, buildings, and trade-marks should be eliminated and that the treasury stock should be canceled. Since there is insufficient surplus to absorb these adjustments, it has been suggested that they be made against the stockholders' net equity and that new shares of no-par value be exchanged for the present shares outstanding, on the basis of one new share for one old share.

The plan has been duly approved by the stockholders and the change in capital has been properly authorized, effective as of January 1, 1954.

You are now requested to furnish the necessary entries to record the new setup in order to prepare and submit a balance sheet as of March 31, 1954. In the period from December 31, 1953, to March 31, 1954, the net earnings from operations amounted to \$40,000. No dividends were paid or declared. All the old shares outstanding have been exchanged for the new ones.

*Instructions:* (1) Submit your adjusting journal entries, giving effect to the reorganization of capital, the elimination of all items of appreciation and intangibles, and the cancellation of treasury stock.

(2) Show the amount of the capital stock account at March 31, 1954, and the manner in which the account would be stated on the balance sheet at that date.

(3) What is the balance in the surplus account at March 31, 1954?

(4) What footnote, if any, would you place on the balance sheet submitted as at March 31, 1954? (A.I.A. adapted)

**17-9.** The Columbia Corporation had \$105,000 of dividends in arrears on its preferred stock as of March 31, 1953. While retained earnings were adequate to meet the accumulated dividends, the company's management did not wish to weaken its working capital position. The management also realized that a portion of the fixed assets were no longer used or useful in their operation. Therefore, the following reorganization was proposed, which was approved by stockholders to be effective as of April 1, 1953:

- (1) The preferred stock was to be exchanged for \$300,000 of 5% debenture bonds. Dividends in arrears were to be settled by the issuance of \$120,000 of \$10 par value, 5% noncumulative preferred stock.
- (2) Common stock was to be assigned a value of \$50 per share.
- (3) Goodwill was to be written off.

- (4) Property, plant, and equipment were to be written down, based on appraisal and estimates of useful value, by a total of \$103,200, consisting of an \$85,400 increase in allowance for depreciation and a \$17,800 decrease in certain assets.
- (5) Current assets were to be written down by \$10,460 to reduce certain items to expected realizable values.

The condensed balance sheet as of March 31, 1953 was as follows:

#### ASSETS

Cash . . . . .		\$ 34,690
Other current assets . . . . .		252,890
Property, plant, and equipment . . . . .	\$1,458,731	
Allowance for depreciation . . . . .	512,481	
		946,250
Goodwill . . . . .		50,000
		\$1,283,830

#### LIABILITIES AND CAPITAL

Current liabilities . . . . .	\$ 136,860
7% Cumulative preferred stock (\$100 par)* . . . . .	300,000
Common stock (9,000 shares, no-par) . . . . .	648,430
Premium on preferred stock . . . . .	22,470
Retained earnings . . . . .	176,070
	\$1,283,830

\*\$105,000 dividends in arrears.

*Instructions:* (1) Prepare journal entries to give effect to the reorganization as of April 1, 1953. Give complete explanations with each entry and comment on any possible options in recording the reorganization.

(2) Prepare a balance sheet as of April 30, 1953, assuming that net income for April was \$10,320 after provision for taxes. The operations resulted in a \$5,290 increase in cash, a \$10,660 increase in other current assets, a \$2,010 increase in current liabilities, and a \$3,620 increase in allowance for depreciation.

(3) In making an audit of The Columbia Corporation as of December 31, 1953, you find that the following items had been charged or credited directly to Retained Earnings during the nine months since April 1, 1953:

- (a) A debit of \$14,496 arising from an income tax assessment applicable to prior years.
- (b) A credit of \$20,387 resulting from a gain on the sale of equipment that was no longer used in the business. This equipment had been written down by a \$10,000 increase in the allowance for depreciation at the time of the reorganization.
- (c) A debit of \$7,492 resulting from a loss on fixed assets destroyed in a fire on November 2, 1953.
- (d) A debit of \$13,500 representing dividends declared on common and preferred stock.

For each of these items, state whether you believe it to be correctly charged or credited to Retained Earnings. Give the reasons for your conclusion. If the item is not handled properly, prepare the necessary correcting entry. (A.I.A. adapted)

### *Intangible Assets and Deferred Charges*

#### **NATURE OF INTANGIBLE ASSETS**

The difference between tangible and intangible assets lies in the physical and nonphysical characteristics of the properties concerned. Tangible assets are physically controlled and used by their owners; intangible assets are certain rights, privileges, and competitive advantages that accrue to their owners. From a legal point of view, such assets as shares of stock, bonds, and claims against customers are regarded as intangibles. For the accountant, however, the intangibles classification is limited to those noncurrent assets of an intangible nature that are employed in the business. These include patents, copyrights, franchises, trademarks, trade brands, formulas and secret processes, goodwill, organization costs, leaseholds, and similar items.

Intangible assets derive their value from the fact that they contribute to the earnings of the business through the special advantages that they represent or the rights or the privileges that they afford. For example, those special advantages resulting from the skill of employees, ability of management, desirable location of a business, and good customer relationships are elements of a company's goodwill. Special rights contributing to profits arise from the ownership of patents and copyrights.

It has already been suggested that intangible assets are generally reported on the balance sheet under a separate heading. When all noncurrent properties that are used in the production of goods and services are listed under the heading of fixed assets, subheadings would be provided for fixed tangibles, consisting of plant and equipment items, and fixed intangibles, consisting of the intangible assets previously mentioned.

#### **VALUATION OF INTANGIBLE ASSETS**

In general, valuation for intangible assets follows the standards employed for the tangible group. Intangibles are normally recorded at cost. Cost would include all expenditures identified with the development or the purchase of the assets. When an intangible is acquired in exchange for an asset other than cash, the fair market value of the asset given in exchange or that of the intangible, whichever is more clearly determinable, is used to record the acquisition. When shares of stock or

bonds are issued in exchange for intangibles, the market value of the securities issued or of the intangibles acquired must be determined in recording the exchange. Purchase of several intangibles or a combination of tangible and intangible assets for one lump sum requires an allocation of cost to the various units acquired.

Costs are reported for intangible assets only when certain expenditures can be related to their acquisition. No value should appear on the books, for example, for such items as goodwill built up over a period of years or a franchise acquired at no cost. However, when intangibles do not have an accountable cost but make significant contribution to the success of the business, reference on the balance sheet to such values by means of a parenthetical remark or note is appropriate.

The accounting for intangibles subsequent to their acquisition depends upon the nature of the asset. The Committee on Accounting Procedure of the American Institute of Accountants classifies intangibles into two general groups as follows:

(a) Those having a term of existence limited by law, regulation, or agreement, or by their nature (such as patents, copyrights, leases, licenses, franchises for a fixed term, and goodwill as to which there is evidence of limited duration).

(b) Those having no such limited term of existence and as to which there is, at the time of acquisition, no indication of limited life (such as goodwill generally, going value, trade names, secret processes, subscription lists, perpetual franchises, and organization costs).<sup>1</sup>

When a limited usefulness is indicated, as in the case of a class (a) intangible above, the asset should be written off over such limited life, its cost being assigned to those periods benefiting from its use. When an unlimited life is indicated, as in the case of a class (b) intangible, it is appropriate to carry the asset at original cost as long as it continues to make a contribution to the success and the profitability of the enterprise. Such procedures parallel those employed for tangible assets that are used in business operations: the cost of a building with a limited life is charged to operations over the useful life of the asset; land with an unlimited life and continued usefulness is carried forward at original cost.

*Intangibles With Limited Term of Existence.* The process of assigning the cost of an intangible with a limited life to periodic revenue in some systematic manner is called *amortization*. Amortization of intangible assets, just as cost allocations for plant and equipment items, may be based on time or output factors. Benefits of an intangible cannot be assumed to continue beyond its legal life. When the useful life of an

<sup>1</sup>*Accounting Research Bulletin No. 24*, "Accounting for Intangible Assets," December, 1944 (New York: American Institute of Accountants), p. 195.

asset is considered to be less than the legal life, the useful life provides the basis for amortization. Cost amortization is recorded by a charge to expense and a credit to the asset, or, if preferred, to an asset valuation account.

Intangibles are reported on the balance sheet at their cost after amortization has been subtracted, or at original cost less the valuation balance when amortization is accumulated separately. If a basis of valuation other than cost is used, full information concerning such valuation should be offered.

The periodic amortization charge is reported as a manufacturing cost on the manufacturing schedule or as an operating expense on the income statement, depending upon the nature of the contribution made by the intangible.

*Intangibles Without Limited Term of Existence.* In the case of intangibles with an unlimited or indefinite existence, partial or complete cost write-offs have been made as a result of: (1) the determination that the usefulness of such intangibles has become limited or has actually come to an end; (2) the adoption of a policy for the arbitrary reduction or elimination of such intangibles.

A cost write-off for an intangible that has lost its original value through the limitation or the termination of its usefulness is fully justified. A partial write-off may be followed by periodic amortization of the balance of cost over an estimated remaining period of usefulness.

The arbitrary write-off of an intangible in the absence of indication of a loss of value is not supportable in theory. The write-off of an intangible that is making a continuing contribution to the success of the business unit is subject to the same criticism that can be made for the write-off of a tangible asset under the same circumstances. Notwithstanding such argument, arbitrary write-offs have been widely encouraged in practice on the grounds of conservatism. It is argued that the elimination of intangible items is desirable in offering a conservative appraisal of financial condition, since intangibles stand the possibility of losing their usefulness and, furthermore, may prove of little or no value upon the sale of a business or its ultimate liquidation. The American Institute Committee on Accounting Procedure in Bulletin No. 24 discourages the arbitrary write-off of an intangible when the value of the asset is unimpaired, but it does not actually prohibit such practice in view of its wide general acceptance and approval.

There is general agreement that when a partial or complete write-off of an intangible cost is made, such a charge should be absorbed by

earned surplus and not by paid-in surplus or other invested capital balances, since earned surplus is the terminus of all costs and revenues. When such a special charge is to be reflected on the income statement, it should not be considered as an operating expense but should be reported as an extraordinary charge in the lower section of the statement. The operating expense section of the income statement, then, shows charges for intangibles only when these can be related to the income of the current period; special charges are reported in the lower section of the income statement or on the earned surplus statement.

The Committee on Accounting Procedure in Bulletin No. 24 recognizes the existence of a special problem with respect to those intangibles that are not considered to have an unlimited life but that do not indicate a limited life that would call for their reclassification as class (a) intangibles as defined earlier. Under such circumstances, the Committee would accept amortization over a reasonable period by systematic charges to operations. However, such procedure "... should be formally approved, preferably by action of the stockholders, and the facts should be fully disclosed in the financial statements."<sup>1</sup> It further suggests that such amortization is within the discretion of the corporation and is not to be regarded as obligatory.

The entries that are required in recognizing decreases in intangible values are illustrated below. A regular charge to operations in recognition of the current use of patents is reported in the first entry. A write-off of goodwill that is not regarded as an appropriate charge to current operating income is reported in the second entry:

(1) Patents Expense	1,500	
Patents		1,500
(2) Goodwill Write-Down Adjustment (or Earned Surplus)		
Goodwill	50,000	50,000

The special accounting problems that arise in connection with specific intangible assets are discussed in the following paragraphs.

## PATENTS

A patent is an exclusive right issued by the United States Patent Office that enables an inventor to manufacture, sell, or otherwise control his invention for a period of seventeen years from the date of the grant. While patents are not renewable, the life of a patented article is frequently extended by obtaining new patents providing for improvements or changes. The patent may be used by its inventor, or its use may be granted to others under royalty agreements.

<sup>1</sup>*Ibid.*, p. 196.

When a patent is developed, its cost includes such items as legal fees, patent fees, the cost of models and drawings, and other related experimental and developmental expenses. When a patent is purchased, the patent is recorded at cost by its new owner. The government gives the owner of the patent an exclusive right to control the use of the invention, but it does not protect him against its infringement. The cost of successfully prosecuting or defending original infringement suits may be capitalized as a part of the cost of establishing the patent. In the event of unsuccessful litigation, both litigation costs and the costs of the patent would be written off as a loss.

The legal life of a patent is used for amortization only when the patent is expected to have usefulness for its full legal life. The useful life of a patent is usually much shorter than its legal life because of factors of obsolescence and supersession. New and more efficient inventions, changes in the demand for certain products, or other conditions frequently result in loss in patent value. An estimated useful life expressed in terms of years or in terms of units of product to be produced provides acceptable bases for patent cost amortization.

The classification of the charge for patent amortization depends upon the nature and the use of the patent. A charge for patents used in the manufacturing process would be classified as a manufacturing expense; a charge for patents used in shipping department activities would be classified as a selling expense.

### **COPYRIGHTS**

Copyrights are exclusive rights granted by the federal government to the author or the artist enabling him to publish, sell, or otherwise control his literary, musical, or artistic works. The right to exclusive control is issued for a period of twenty-eight years, with the privilege of renewal for another twenty-eight years.

The cost assigned to a copyright consists of all of the charges relating to the production of the work, including those required to establish the right. When a copyright is purchased, the copyright is recorded at cost by its new owner.

The useful life of a copyright is generally considerably less than its legal life. It would be appropriate to write off costs of a copyright on the basis of the estimated total sales units relating to such rights; however, as a conservative measure, costs of a copyright are frequently written off against first revenues from this source.

### **FRANCHISES**

A franchise is a grant by a governmental unit permitting the use of public properties for certain public benefits. These privileges are ordinarily associated

with public utility enterprises and may be granted for a specific number of years, for an indefinite period, or for perpetuity.

When a franchise is acquired at no cost, an amount should not be assigned to the item even though it is of great value, but the nature of the grant should be disclosed on the accounting reports. When a sum is paid either to the granting body for certain privileges or to another corporation for rights that are taken over, the franchise is reported at such cost on the books of the party acquiring the rights. Legal fees and other expenditures incurred in obtaining a franchise are properly charged to the franchise account.

When the life of a franchise is limited, its cost should be charged to the income of the periods that benefit from its use. When the life of a franchise can be terminated at the option of the granting authority, the cost is best amortized over a relatively short period. Costs of a perpetual franchise may be carried forward indefinitely as long as the franchise is of continuing value. When the cost of a perpetual franchise is arbitrarily reduced or written off, the charge should not be made to operations, since the cost does not relate to current income; instead, the write-off should be treated as an extraordinary charge or as a charge to earned surplus.

#### **TRADE-MARKS AND TRADE NAMES**

Trade-marks, together with trade names, distinctive symbols, labels, and designs are important to all companies that depend upon a public demand for their products. It is by means of such distinctive markings that particular products are differentiated from competing brands. In building up the reputation of a product, relatively large costs may be involved. The federal government enables a person or a business to protect such expenditures by registering trade-marks with the United States Patent Office. Prior and continuous use is the important factor in determining the right to use a particular trade-mark. The right to a trade-mark is retained so long as continuous use is made of it.

When a trade-mark is developed, the cost of the trade-mark includes developmental expenditures such as designing expenses, filing and registry fees, and costs of successful litigation in connection with infringement suits. A trade-mark is recorded at cost when it is purchased.

Since the life of a trade-mark is not limited, its cost may be carried forward until it is ascertained that there has been a loss in value. However, cost is frequently written off over a relatively short period on the theory that changes in consumer demand may limit or terminate the life of the asset.

**FORMULAS AND SPECIAL PROCESSES**

Large enterprises engage in continuous research for the improvement of processes and formulas and the development of new and improved products. General research costs are considered a part of regular manufacturing overhead, research being regarded as a continuing cost of keeping abreast of current technological advance. When research is directed to certain particular improvements, it is appropriate to capitalize costs identified with such projects. When these activities are successful, costs as accumulated can be assigned to future periods that are the beneficiaries of such outlays. Improvements that are patentable are summarized and reported as patents; those that are not patentable but that offer exclusive benefits may be summarized and reported as formulas and special or secret processes. When activities directed to certain improvements prove unsuccessful, capitalized costs should be written off as a loss. Formulas and special processes are generally written off over a relatively short period because their possible discovery by others may limit or destroy any advantage offered through their possession.

Some companies follow the practice of charging all costs of research to operations, even when such research results in the development of valuable rights. Such a policy is defended on the grounds of balance sheet conservatism. However, when such practice is followed, the balance sheet may fail to disclose special processes and improvements of considerable value that make significant contribution to future business success; the income statement is freed from charges relating to past developments, but in turn may be burdened by charges that are applicable to future periods.

**GOODWILL**

Goodwill, in a general sense, is considered to arise from those special advantages connected with a going concern, such as its good reputation, capable staff and personnel, high financial standing, reputation for superior products and customer services, and favorable location. From an accounting point of view, goodwill is the ability of a business to realize above-normal profits as a result of these factors. By "above-normal profits" is meant a rate of return on a particular investment that is greater than that ordinarily necessary to attract new owners to that type of business.

**CALCULATION OF GOODWILL**

Goodwill is recorded on the books of a company only when it is acquired through a purchase or otherwise established by a transaction. The latter condition includes its recognition on the books in connection with a merger or a reorganization of a corporation, a purchase or a partial purchase of a business, or a change in the membership of a partnership. Recogni-

tion only under such circumstances assures an objective approach to the valuation of goodwill. To permit the recognition of goodwill on the basis of judgment and estimates by owners and other interested parties would open the doors to all manner of abuse and misrepresentation. Goodwill reported on the balance sheet arises from a purchase or a contractual arrangement calling for its recognition; above-normal earnings can be pointed to by management and owners as evidence of the existence of further goodwill that has not found expression in the accounts.

In the purchase of a going business, past profits ordinarily offer the best basis upon which to develop a specific value for goodwill. It is not these past profits, however, but similar prospective profits that are being purchased. The following points require special attention and analysis in the development of a value for goodwill:

- (1) Selection of profit periods to be used as a basis for analysis and projection.
- (2) Elimination of the extraordinary items included in the past profits or losses.
- (3) Analysis of the trend and the uniformity of past profits.
- (4) Estimate of the level of future profits.
- (5) Determination of the appropriate rate of return on the investment.
- (6) Valuation of business assets other than goodwill.
- (7) Use of estimated future profits and required earnings rates in arriving at a value for goodwill.

In considering past profits as a basis for projection into the future, reference should be made to those profits most recently experienced. Furthermore, a sufficient number of periods should be included in the analysis so that a fully representative measurement of business performance is available.

Extraordinary and nonrecurring gains and losses that cannot be considered a part of normal activities are usually excluded from past profits or losses. Examples of such items include gains and losses from the sale of plant and equipment or investments, losses from fire or theft, and gains and losses from other unusual sources.

The ordinary or normal profits from operations should be analyzed to determine their trend and uniformity. If the profits over a period of years show a tendency to decrease, an explanation should be sought, since this may indicate a continuing shrinkage in future profits. There may be greater confidence in future possible profits when profits have been relatively uniform in the past than when profits have fluctuated widely from year to year.

The past normal profits are used as a basis for estimating the earnings of the future. Business conditions, the business cycle, sources of

supply, demand for the product or services supplied, the price structure, competition, and other significant factors must be studied in developing data that will make it possible to convert past earnings into estimated future earnings.

The normal profit rate that is used for the capitalization of income in order to determine goodwill depends on market conditions at the time the purchase is made, the type of business, and the risks involved.

Before the calculation of goodwill, the value of the net assets other than goodwill should be determined. Assets at their current fair market values, less the amount of liabilities assumed, provide the net asset balance, and these data, together with estimated future earnings, are used in arriving at a purchase price for the business.

The actual determination of the price to be paid for goodwill usually results from bargaining and compromises between the parties concerned. The price agreed upon for goodwill is the amount that is recorded on the buyer's books. Such agreement, however, requires some basis from which to start bargaining. Several methods of arriving at a goodwill figure are illustrated below. These are based upon the following information for Company A:

Net earnings after elimination of extraordinary and nonrecurring items:

1949	\$140,000
1950	90,000
1951	110,000
1952	85,000
1953	115,000
	<hr/>
Total	\$540,000
	<hr/>

Average annual earnings ( $\$540,000 \div 5$ ), \$108,000.

Estimated annual future earnings, \$100,000.

Net assets as appraised on January 1, 1954, before recognizing goodwill, \$1,000,000. (Land, buildings, equipment, inventories, receivables, \$1,200,000; liabilities to be assumed by purchaser, \$200,000.)

The average annual earnings of \$108,000 for the five-year period 1949-53 was used in arriving at an estimate of the probable future annual earnings. It is assumed that an analysis of the assembled information by the prospective purchaser suggests that future earnings may be conservatively estimated at \$100,000 a year.

(1) *Capitalization of Average Net Earnings.* The amount to be paid for a business may be determined by capitalizing expected future earnings at a rate that represents the desired return on the investment.<sup>1</sup>

<sup>1</sup>Capitalization of earnings as used here means the calculation of a principal value that will offer the stated earnings in terms of the required yield.

The difference between the amount to be paid for the properties thus obtained and their appraised value may be considered the price of goodwill. In the example, if a return of 8% is desired on the investment and earnings are estimated at \$100,000 a year, a valuation of \$1,250,000 is obtained ( $\$100,000 \div .08$ ). Since net assets, before goodwill, are valued at \$1,000,000, the difference between this amount and the price paid, \$1,250,000, or \$250,000, would be the cost assigned to goodwill. If a 10% return were required, net assets would be valued at \$1,000,000 and there would be no goodwill on the purchase.

(2) *Capitalization of Average Excess Earnings.* The foregoing method considered only earnings in the calculation of the amount to be paid for properties and goodwill. It would seem more reasonable, however, to consider the net assets to be transferred, as well as the earnings to accompany these assets, in the determination of the price to be paid. To illustrate, assume the following facts:

	COMPANY A	COMPANY B
Estimated annual future earnings.....	\$ 100,000	\$100,000
Net assets as appraised.....	1,000,000	500,000

If the estimated earnings are capitalized at 8%, the values of both Companies A and B are found to be \$1,250,000. The goodwill for Company A is then \$250,000, and for Company B, \$750,000 as shown:

	COMPANY A	COMPANY B
Total value (earnings capitalized at 8%)....	\$1,250,000	\$1,250,000
Deduct net assets as appraised. ....	1,000,000	500,000
Goodwill.....	\$ 250,000	\$ 750,000

The foregoing calculations ignore the fact that the appraised value of the net assets identified with Company A exceeds that of Company B. Company A, whose earnings of \$100,000 are accompanied by properties valued at \$1,000,000, would certainly command a higher price than Company B, whose earnings of \$100,000 are accompanied by properties valued at only \$500,000.

Satisfactory recognition of both earnings and asset contributions is generally effected by requiring a certain return on properties at their appraised values and capitalizing any estimated future earnings in excess of a reasonable return at a higher rate in support of a goodwill valuation. To illustrate, assume in the foregoing cases that 8% is considered a reasonable return on net assets acquired and that excess

earnings are capitalized at 20% in determining the amount to be paid for goodwill. Use of a higher capitalization rate on the purchase of goodwill is justified on the grounds of the uncertainty and fluctuations in value of this asset, the inability to divorce this asset from the business as a whole for sales purposes, and the probability of its total loss in the event of liquidation. Amounts to be paid for Companies A and B acquired on the above basis are calculated as follows:

	COMPANY A	COMPANY B
Estimated annual earnings:	\$ 100,000	\$ 100,000
Co. A—normal return at 8% on net assets of \$1,000,000.....	80,000	
Co. B—normal return at 8% on net assets of \$500,000.....		40,000
Excess annual earnings.....	\$ 20,000	\$ 60,000
Value of net assets offering return of 8%	\$1,000,000	\$ 500,000
Value of goodwill:		
Co. A - excess annual earnings of \$20,000 capitalized at 20% . . . .	100,000	
Co. B — excess annual earnings of \$60,000 capitalized at 20%.....		300,000
Total asset valuation including goodwill..	\$1,100,000	\$ 800,000

Assuming that Company A is acquired for cash of \$1,100,000, individual assets would be recorded on the books of the buyer at the appraised values, goodwill would be recorded at \$100,000, liability accounts would be credited for the obligations assumed, and cash would be credited for the amount paid. Goodwill, having been acquired by purchase, is properly reported as an intangible asset on the balance sheet of the purchaser.

One frequently finds that payment for excess earnings is stated in terms of "years' purchase" rather than in terms of capitalization at a certain interest rate. Capitalization of average excess earnings at 20% is the same as payment for five years' excess earnings ( $1.00 \div .20$ , or 5); capitalization of average excess earnings at 25% is the same as payment for four years' excess earnings ( $1.00 \div .25$ , or 4); etc.

When a lump sum amount is paid for a business in the absence of an analysis of respective asset acquisitions as illustrated, net assets other than goodwill still require appraisal, and the difference between the total of such assets and the purchase price is recognized as goodwill. Failure to recognize the payment for goodwill separately and the identification of such cost with depreciable assets will result in the overvaluation of the latter assets and in the misstatement of periodic

depreciation and net earnings. Failure to distinguish satisfactorily between costs of intangibles with a limited life and subject to amortization and those considered to have an unlimited life will result in similar misstatements of position and earnings.

When capital stock is issued in exchange for a business, the value of the stock issued determines the consideration paid for the assets. Care must be exercised so that what in effect represents a discount on the stock is not reported as goodwill. For example, assume that 10,000 shares of common stock, par \$10, but selling on the market at  $7\frac{1}{2}$ , are exchanged for assets valued at \$60,000 before recognition of goodwill. The purchase should be recorded as follows:

Assets	60,000	
Goodwill	15,000	
Discount on Common Stock	25,000	
Capital Stock		100,000

#### **GOODWILL ADJUSTMENT AFTER ACQUISITION**

It has been maintained that when goodwill is acquired after sound and conservative determination and when its life is not limited, it should continue to be carried at cost indefinitely. This position is supported on the grounds that goodwill has an indeterminate life. Management, in the attempt to continue favorable operations, will maintain the value existing in the acquired goodwill. The intangible values originally obtained are considered to be perpetuated or supplanted by new business advantages.

It would seem that a stronger case can be made for the position of maintaining goodwill at original cost only so long as the advantages supporting its original recognition are continuing. With changes that suggest the impairment or the disappearance of the advantages represented by goodwill, adjustments in this balance are just as appropriate as those made in the case of other assets whose capacities to contribute to the production of future revenue have become limited or have disappeared. In applying the foregoing standards, a reduction in goodwill should be recognized as an extraordinary charge or as a decrease in earned surplus except when such charge is considered to relate to the revenue of the current period.

In some instances goodwill may be considered to have a measurable life. Under such circumstances, the amortization of goodwill is just as appropriate as the amortization of other limited-life intangibles. For example, assume that \$100,000 is paid for goodwill on the purchase of a business whose lease expires in ten years. If it is believed that the business will not continue beyond the life of the lease, goodwill benefits

are limited to a ten-year period, and the cost of the intangible is a proper charge to operations over this period. When goodwill is calculated as the discounted present value of a certain number of years' excess profits on the theory that profits will tend to decline as a result of competition, changes in the business cycle, and the exhaustion of other goodwill factors, it is possible to support a charge of goodwill to operations on some systematic basis during its estimated period of usefulness.

While there is theoretical support for maintaining goodwill on the records indefinitely when its value remains unimpaired, the practice of writing off this intangible is widespread. Goodwill is frequently reduced periodically or written off in total upon its acquisition or at some later date. In instances where such arbitrary action is authorized by management, the charge should be reported as an extraordinary item. When goodwill, or any other intangible, is arbitrarily written off before the end of its useful life, asset and capital balances are misstated and the ratio of earnings to invested capital is distorted. Earnings appear to be more favorable than is actually the case as a result of this "conservative" practice.

A charge for the amortization or the write-down of goodwill is not allowed in calculating income for income tax purposes. Goodwill, for tax purposes, is regarded as an asset of permanent character.

Goodwill is frequently listed on published balance sheets at one dollar. The explanation may be either of the following: (1) a company that has built up its own goodwill may have brought it on the books at this value in order to call the reader's attention to its existence without inflating the asset and capital sections of the statement; (2) a company that has purchased goodwill has arbitrarily written it down to this nominal figure. Similar practices are frequently encountered with respect to patents, trade-marks, copyrights, and other intangibles.

### **ORGANIZATION COSTS**

When a corporation is formed, certain expenditures, such as those for legal fees, promotional expenses, stock certificate costs, underwriting fees, taxes, and incorporation fees, are incurred. Such expenditures may be considered to provide benefits that accrue to more than just the first fiscal period. This would support the capitalization of these items. Further, the recognition of such expenditures as expenses at time of organization would commit a corporation to a deficit before it actually began normal activities. This factor, too, encourages the practice of capitalization of initial costs of organization.

Expenditures relating to organization may actually be considered to benefit the corporation during its entire life. Thus, when the life of a company is not limited, there is support for carrying costs as an intangible asset permanently. On the other hand, costs of organization, in the absence of a disposal value, must be applied to revenue before the ultimate profit emerging from business activities is determinable. This approach has led to the widespread practice of writing off the asset, in many instances within a relatively short period such as three to five years from the date of corporate organization. Such cost amortization, when not assignable to current operations, is preferably reported as an extraordinary charge or as a charge to earned surplus.

For income tax purposes, organization costs, like goodwill, are viewed as an intangible asset of permanent character; deductions for amortization or the write-off of this asset are not allowed in arriving at taxable income.

It is sometimes suggested that operating losses of the first few years should be capitalized as organization costs or as goodwill. It is argued that such losses cannot be avoided in the early years when the business is being developed, and hence it is reasonable that later years should absorb such initial losses. Although losses may be inevitable, to report such losses as intangibles will result in the overstatement of assets and owners' capital. Such practice cannot be supported.

#### **LEASEHOLDS AND LEASEHOLD IMPROVE- MENTS**

Leaseholds arise when the use of property is acquired for a number of years through terms of a tenure contract called a *lease*. The terms of the lease and the use or the disposition of the property by the lessee usually determine the accounting procedure to be followed in connection with the lease. If the property is used by the lessee in his regular operations and if rentals under the lease are paid periodically when due, the leasehold need not appear on the lessee's books. Periodic rentals under the lease are charged by the lessee to operating expense for the period covered by each installment.

While the possession of a lease with periodic rentals calls for the recognition of neither asset nor liability balances, it nevertheless confers special advantages and creates certain obligations during its lifetime. When such factors are considered of particular significance, whether favorable or unfavorable, they must be brought to the attention of the reader of the financial statements if he is to be fully informed on financial matters. Disclosure under such circumstances should be made by an appropriate note on the statement. The Institute Committee on Accounting Procedure recommends disclosure of the follow-

ing data when material under the circumstances: "(1) the amounts of annual rentals to be paid under such leases with some indication of the periods for which these are payable, and (2) any other important obligation assumed or guarantee made in connection therewith."<sup>1</sup> It further suggests that the above information should be given not only in the year in which the transaction originates, but also as long thereafter as the amounts involved are material.

There are certain circumstances under which a leasehold may call for entries on the books. These situations include the following:

(1) The lessee may be required to pay a certain lump sum amount as advance rental or bonus at the time the lease is first negotiated. Such an amount is properly capitalized and is assigned as expense to the appropriate operating periods.

(2) The lessee may sublease the property to another party at a rental in excess of that payable under the original lease. If the payment of the rental under the sublease is adequately secured both by the earning power of the sublessee and by improvements made by the sublessee, the original lessee may show the leasehold on his books. The value at which the leasehold may be carried is the discounted value of the excess rentals receivable under the sublease. Under these circumstances the value of the leasehold must be amortized over the period covered by the sublease. This procedure is followed particularly when the leasehold is to serve as the basis for the extension of credit.

Leasehold improvements arise when property has been leased and additions, improvements, or alterations are made by the lessee. Such improvements are identified with the original property and accrue to the owner at the expiration of the lease. The lessee, however, enjoys the use of such changes throughout the period of the lease. Under such circumstances, improvement costs are appropriately recorded by the lessee as leasehold improvements, regarded as an intangible asset, and this balance may then be written off to operations over the life of the benefits.

Ordinarily, the amortization of leasehold improvements is based on time factors. Since leasehold improvements revert to the lessor upon termination of the lease, the useful life of the improvements to the lessee is limited to that of the lease and hence their costs should be amortized over the lease period. For example, assume that an improvement estimated to have a 25-year life is completed when a lease has only 20 years more to run. Since the property will revert to the lessor, the improvement has only a 20-year useful life to the lessee. If the improvement has a life that is shorter than the lease, both lease and lease improvement costs are spread over their own respective life

<sup>1</sup>*Accounting Research Bulletin No. 38*, "Disclosure of Long-Term Leases in Financial Statements of Lessees," October, 1949, (New York: American Institute of Accountants), p. 292.

periods. When leaseholds include renewal options, improvements would still be amortized over the life of the original period. Such a practice is appropriate in view of the uncertainty of the lease extension. Failure to continue occupancy for the original term of the lease will call for recognition of a loss arising from the unamortized leasehold balance.

It is sometimes provided that the lessor, upon the termination of the lease, shall pay a certain amount for leasehold improvements turned over to him. The amount to be paid may be an arbitrary price agreed upon beforehand, the depreciated book value of the property, or the appraised value of the property at time of transfer. When such a payment is involved, the amount to be charged to operations by the lessee is the cost of the improvements less the estimated amount recoverable upon termination of the lease.

In certain instances a lease arrangement may represent, in effect, an installment purchase of property. This would be the case, for example, when property is subject to purchase for a nominal sum upon conclusion of the lease, or when it is provided that periodic rentals may be applied to a purchase price for the leased property. While it may be argued that in the absence of a purchase there is no need to report the property item or an obligation for such property, the Institute Committee on Accounting Procedure in Bulletin No. 38 is of the opinion "that the facts relating to such leases should be carefully considered and that, where it is clearly evident that the transaction involved is in substance a purchase, then the 'leased' property should be included among the assets of the lessee with suitable accounting for the corresponding liabilities and for the related charges in the income statement."<sup>1</sup>

#### **DEFERRED CHARGES**

Noncurrent assets in the form of investments, plant and equipment, and intangibles have been described in previous pages. A fourth subdivision of non-current assets is found in the deferred charges group. This group consists of certain other expenditures for services or benefits that are allocable to the income of a number of fiscal periods.

The cost of issuing bonds, including printing, underwriting, and promotion fees, may be capitalized as a deferred charge and written off over the life of the bond issue that benefits from such outlays. When bonds of a corporation are issued at less than face value, the bond discount is usually combined with the costs of issuing bonds and included among the deferred charges. The accounting procedures to be

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*Ibid.*, p. 293.

followed in recording and amortizing bond discount and expense are found in the next chapter.

Costs of extensive repairs, moving, and rearrangement of existing machinery and equipment are sometimes deferred and charged to the operations of several periods. Such procedure is not objectionable if future periods benefit from the expenditures and full disclosure is made of the nature of the deferred item on the balance sheet. When the costs mentioned are capitalized, they should normally be amortized over a reasonably short period in view of the possibility of future improvements and rearrangements.

It is sometimes suggested that expenditures relating to an unusually extensive advertising campaign should be capitalized and written off during subsequent periods, since later periods continue to benefit from current expenditures. However, since the benefits of advertising may prove short-lived and since similar expenditures may be required in following years to perpetuate the benefits acquired through advertising, it is advisable to charge all of such costs to current operations.

Experimental, developmental, and improvement costs, when these are not appropriately chargeable to plant and equipment or intangible assets and are considered properly chargeable against future revenues, may be recorded as deferred items. In reporting such balances among deferred charges, a full description of the nature of the charges should be provided, together with an explanation in note form in support of the policy of deferral. In the event of any doubt as to future benefit and allocability, such expenditures should be charged to current operations. Losses such as may arise from operations of early years, from catastrophes, or from other extraordinary sources, should under no circumstances be deferred, even though their recognition results in a deficit on the balance sheet.

#### **SHORT-TERM**

#### **DEFERRED EXPENSES**

While short-term deferred expenses may be considered as current or working capital items, it is still common practice to list these within the deferred charges section on the balance sheet. Assets that fall in the category of short-term deferred expenses include prepaid insurance, rent, taxes, advertising, royalties, deferred interest expense, and various supplies on hand. A detailed discussion of the methods of accounting for deferred expenses was presented in Chapter 4.

The bases of cost allotment to operations for short-term deferrals are similar to those involved in the case of long-term deferrals. The method to be used in each case depends upon the type of deferred item involved. Assets that have a definite service life, such as prepaid

insurance and rent, are charged to operations on a prorata time basis. Supplies and similar assets are charged to operations on the basis of consumption. A number of special problems arise in connection with accounting for insurance on business properties. Because of the importance of insurance in business, the remaining pages of this chapter are devoted to a detailed discussion of this matter.

### INSURANCE

The various costs for insurance protection extending beyond a year may be recorded as assets when expenditures are made. Periodically, the asset balances are reduced by the amounts of insurance that have expired.

Of all the various types of protection provided by insurance, fire is probably the most universal business risk covered. Fire insurance policies are usually written in \$100 or \$1,000 units for a period of 1, 3, or 5 years. Since there is some saving in premium payments covering a longer period, the policies are customarily written for 3 or 5 years, with the entire premium payable in advance.

The amount of the premium depends on the conditions in each particular case. Some of the factors considered in setting a premium rate are type, location, use, and protection afforded the property being insured. By type is meant the material used in the construction of the property. In location, the surroundings, such as the distance between properties and the general hazards of the area, are considered. Use refers to the nature of the work being carried on. Protection includes consideration of the safety devices available, such as automatic sprinklers and the proximity and efficiency of the fire-fighting equipment.

The insurance contract may be canceled by either the insurer or the insured. If it is canceled by the insurance company, a refund is made on a prorata basis. When the policyholder cancels the policy, a refund may be made on what is known as a "short-rate" basis that provides for a higher insurance rate for the shorter period of coverage.

### COINSURANCE

A *coinsurance clause* is frequently written into a policy by the insurance companies to offset the tendency on the part of those buying insurance protection to purchase only the estimated minimum coverage. A business with assets that are worth \$100,000, for example, may estimate that any single loss could not destroy more than one half of these assets. On the basis of this estimate, the business might consider itself adequately protected by insurance of \$50,000. With an 80% coinsurance clause, however, it would be necessary for the business to carry insurance up to 80% of the value of the property, or \$80,000, if any loss up to \$80,000 is to be fully paid by the insurance company.

The standard coinsurance clause form reads as follows:

"It is expressly stipulated and made a condition of the contract that, in event of loss, this company shall be liable for no greater proportion thereof than the amount hereby insured bears to \_\_\_ per cent of the actual value of the property described herein at the time when such loss shall happen, nor for more than the proportion which this policy bears to the total insurance thereon."

In attaching this clause to an insurance policy, the agreed percentage is inserted in the blank space provided. Assuming that 80% is inserted in the clause, this indicates that the insurance company will pay the full amount of a claim, up to the face of the policy, only if the insurance coverage equals 80% of the value of the property at the time of the loss. When less than the stipulated percentage of insurance is carried, the insured shares in the risk along with the insurance company.

To illustrate the calculation of the amount to be paid on a claim arising under a policy that does not meet the coinsurance requirement, assume the following: assets are insured for \$70,000 under a policy containing an 80% coinsurance clause. On the date of a fire, assets have a fair market value of \$100,000. Since the policy does not meet the coinsurance requirement, any loss will be borne  $\frac{7}{8}$  by the insurance company and  $\frac{1}{8}$  by the policyholder; however, the total loss to be absorbed by the insurance company is limited in any case to \$70,000, the face of the policy. A fire loss of \$48,000, for example, would be divided as follows:

(a) \$70,000 = face value of the insurance policy.

(b) \$80,000 = coinsurance requirement (80% of the value of assets of \$100,000).

(c) \$10,000 = difference between the face value of the policy and the coinsurance requirement.

Share of loss to be borne by the insurance company:  $\frac{(a) \ 70,000}{(b) \ 80,000} \times \$48,000 = \$42,000$

Share of loss to be borne by the policyholder:  $\frac{(c) \ 10,000}{(b) \ 80,000} \times \$48,000 = \underline{\underline{6,000}}$

Total loss

\$48,000

The same principles may be applied to a loss greater than \$70,000, the face of the policy; however, the loss to be absorbed by the insurance company is limited to the face of the policy. Assume the same facts as above but a \$75,000 loss. Application of the formula results in the following:

Share of loss to be borne by the insurance company:  $\frac{70,000}{80,000} \times \$75,000 = \$65,625$

Share of loss to be borne by the policyholder:  $\frac{10,000}{80,000} \times \$75,000 = 9,375$

Total loss \$75,000

In the above example the formula results in a correct allocation, since the company's share is still less than the face of the policy. However, assume a loss of \$90,000. The following calculations are made:

$$\frac{70,000}{80,000} \times \$90,000 = \$78,750$$

$$\frac{10,000}{80,000} \times \$90,000 = 11,250$$

Total loss \$90,000

In this case the insurance company does not pay the amount determined by the allocation, since its risk is limited to \$70,000, the face value of the policy. The division of the loss, then, is as follows:

Share of loss to be borne by insurance company.....	\$70,000
Share of loss to be borne by policyholder.....	20,000
Total loss .....	\$90,000

When the insurance coverage is equal to or greater than the percentage required by the coinsurance clause, the formula need not be applied, since any loss is paid in full up to the face value of the policy. It is important to note that coinsurance requirements are based not on the cost or book value of the insured property but upon the actual value of the property on the date of a fire. If coinsurance requirements are to be maintained, a rise in the value of insured assets requires that increased insurance coverage be acquired.

The following general rule may be stated with respect to fire insurance: The amount of the claim to be paid by the insurance company will be the *lowest* of the following amounts:

- (1) The amount allocable to the insurance company as a result of the application of the coinsurance formula to the fire loss.
- (2) The face value of the policy.
- (3) The amount of the loss.

When several policies cover a single piece of property, recovery of a portion of the loss is made under each policy. Collections on each

policy are made in accordance with the part that the policy represents in terms of the total insurance carried or the total insurance requirements per policy, whichever is higher. To illustrate, assume a fire loss of \$20,000 on buildings valued at \$100,000. Insurance policies are carried as follows: with Co. A, \$60,000; with Co. B, \$15,000.

- (a) Assuming that policies have no coinsurance clauses:  
Recoverable from:

$$\begin{array}{rcl} \text{Co. A} - \frac{60,000 \text{ (policy)}}{75,000 \text{ (total policies)}} \times \$20,000 \text{ (loss)} & = & \$16,000 \\ \text{Co. B} - \frac{15,000 \text{ (policy)}}{75,000 \text{ (total policies)}} \times \$20,000 \text{ (loss)} & = & 4,000 \\ & & \underline{\underline{\$20,000}} \end{array}$$

- (b) Assuming that each policy includes an 80% coinsurance clause:  
Recoverable from:

$$\begin{array}{rcl} \text{Co. A} - \frac{60,000 \text{ (policy)}}{80,000 \text{ (coinsurance requirement)}} \times \$20,000 \text{ (loss)} & = & \$15,000 \\ \text{Co. B} - \frac{15,000 \text{ (policy)}}{80,000 \text{ (coinsurance requirement)}} \times \$20,000 \text{ (loss)} & = & 3,750 \\ & & \underline{\underline{\$18,750}} \end{array}$$

- (c) Assuming that coinsurance clauses are as follows: Co. A, 90%; Co. B, 80%:  
Recoverable from:

$$\begin{array}{rcl} \text{Co. A} - \frac{60,000 \text{ (policy)}}{90,000 \text{ (coinsurance requirement)}} \times \$20,000 \text{ (loss)} & = & \$13,333 \\ \text{Co. B} - \frac{15,000 \text{ (policy)}}{80,000 \text{ (coinsurance requirement)}} \times \$20,000 \text{ (loss)} & = & 3,750 \\ & & \underline{\underline{\$17,083}} \end{array}$$

## ACCOUNTING FOR FIRE LOSS

In the event that a fire occurs and journal and ledger records are destroyed, account balances to the date of the fire will have to be reconstructed by means of the best available evidence. As the first step in summarizing the fire loss, books as maintained or as reconstructed are adjusted as of the date of the fire. With accounts brought up to date, the loss may now be summarized in a fire loss account. The fire loss account is debited for the adjusted book value of property destroyed; it is credited for (1) amounts recoverable from insurance companies and (2) amounts recoverable from any salvage. The balance of the account is recognized as an extraordinary loss and is closed into the profit and loss account or directly to earned surplus at the end of the period.

A number of special problems are encountered in arriving at the charges to be made to the fire loss account. When merchandise is destroyed by fire, the estimated cost of the merchandise on hand at the time of the fire must be determined. When perpetual inventory records are available, the goods on hand may be obtained from this source. In the absence of such records, the inventory balance is generally arrived at by the gross profits method. Sales to the date of the fire are reduced to cost of goods sold by subtracting the estimated gross profit on sales; the sum of beginning inventory and purchases (the goods available for sale) less the estimated cost of goods sold gives the estimated inventory on the date of the fire. This balance may be set up by a charge to the inventory and a credit to the profit and loss account. The inventory total or portion destroyed by fire may now be transferred to the fire loss account. When depreciable assets are destroyed, the book values of the properties are brought up to date and these balances in total or in part are then transferred to the fire loss account.

Insurance expired to the date of the fire is recorded as an expense of normal operations. The balance in the prepaid insurance account after this adjustment is continued as an asset because, under modern insurance policies, each policy remains in force and continues to offer original protection against loss upon the repair or the replacement of the properties which were damaged or destroyed. If a business does not plan to replace the damaged or destroyed assets, it may cancel a part or all of a policy and receive cash for it on a short-rate basis. The difference between the book value of the prepaid insurance and the amount received on the short-rate basis is a loss from insurance cancellation brought about by the fire, and is recorded as an addition to the fire loss balance.<sup>1</sup>

To illustrate the accounting for a fire loss, assume the facts that follow. J. J. Bailey, a retailer, suffers a fire loss after the close of business on March 31, 1954. Assets destroyed and amounts recoverable from insurance and salvage are summarized below:

Item	Loss — Book Values	Amounts Recoverable
Inventory	Entire inventory, estimated to have a cost of \$18,000	Salvage goods valued at. \$ 1,400 Policy carried. . . . . 12,500 Amount recoverable from insurance company: full amount. . . . . 12,500

<sup>1</sup>Under policies written in some states, payment of a policy may serve to cancel that portion of the policy paid on the theory that the insurance company has met such claim obligations on the policy. When this is the case, any unexpired insurance balance applicable to the portion of the policy collected should be written off as an addition to the fire loss account.

Item	Loss — Book Values	Amounts Recoverable
Equipment	One third of equipment:	
	Cost of equipment .. \$15,000	Policy carried..... \$ 6,000
	Allowance for depr., 1/1/54 \$9,000	Value of equipment, date of fire, as agreed by insured and insurer..... 7,800
	Add depr. at 10% for 3 mo. 375 9,375	Amount recoverable from insurance company: $\frac{1}{3} \times \$7,800$ ..... 2,600
	<u>\$ 5,625</u>	
	Book value of portion lost:	
	Cost: $\frac{1}{3} \times \$15,000$ .. \$ 5,000	
	Allowance: $\frac{1}{3} \times \$9,375$ 3,125	
	<u>Fire loss: asset book value..... \$ 1,875</u>	
Buildings	One fourth of buildings:	
	Cost of buildings .. \$32,000	Policy carried..... \$35,000
	Allow. for depreciation, 1/1/54..... \$4,000	Value of buildings, date of fire, as agreed by insured and insurer..... 32,000
	Add depreciation at $2\frac{1}{2}\%$ for 3 months 200 4,200	Amount recoverable from insurance company: $\frac{1}{4} \times \$32,000$ ..... 8,000
	<u>\$27,800</u>	
	Book value of portion lost:	
	Cost: $\frac{1}{4} \times \$32,000$ \$ 8,000	
	Allowance $\frac{1}{4} \times \$4,200$ 1,050	
	<u>Fire loss: asset book value..... \$ 6,950</u>	

When a number of adjustments must be made, a work sheet is prepared to summarize activities to the date of the fire and the loss resulting from the fire. A work sheet prepared for J. J. Bailey as of March 31 is illustrated on pages 528 and 529. The work sheet illustrated provides two pairs of columns for data required to bring accounts up to date: one pair of columns gives the adjustments required in summarizing normal activities to the date of the fire, March 31; the second pair of columns gives account changes resulting from the fire. It would be possible to summarize both types of data in a single pair of columns.

The adjustments and the entries to record the fire loss as reflected on the working papers and as they would appear in the journal are listed on pages 529, 530, and 531.

Explanations are not shown with the journal entries to save space; each entry in the journal, however, would require appropriate explanation, together with data used in arriving at amounts reported in the

J. J.  
WORK  
MARCH 31,

	TRIAL BALANCE MARCH 31		ADJUSTMENTS AS OF MARCH 31		
	Dr	Cr	Dr	Cr	
1 Cash	3,450				1
2 Trade Receivables	6,600				2
3 Inventory	12,250		(b) 18,000	(a) 12,250	3
4 Prepaid Insurance . . .	1,020			(c) 165	4
5 Equipment	15,000				5
6 Allow for Depreciation — Equip		9,000		(d) 375	6
7 Buildings	32,000				7
8 Allow. for Depreciation — Bldgs		4,000		(e) 200	8
9 Land	18,500				9
10 Trade Payables		6,050			10
11 J. J. Bailey, Capital		72,350			11
12 Sales		53,250			12
13 Purchases	42,250				13
14 Expenses	13,580		(c) 165	(f) 350	14
15			(d) 375		15
16			(e) 200		16
17			(g) 710		17
18	144,650	144,650			18
19 Profit and Loss			(a) 12,250	(b) 18,000	19
20 Miscellaneous Prepaid Expenses			(f) 350		20
21 Miscellaneous Accrued Expenses				(g) 710	21
22 Fire Loss					22
23 Loss — Inventory					23
24 Loss — Equipment					24
25 Loss — Buildings					25
26 Insurance Recovery—Inventory					26
27 Insurance Recovery — Equip.					27
28 Insurance Recovery — Bldgs.					28
29 Salvage Recovery—Inventory					29
30 Recoverable from Ins. Cos					30
31					31
32					32
33 Salvage Goods					33
34			32,050	32,050	34
35 Net Decrease in Capital					35
36					36

entries. After these entries are posted to the ledger, the fire loss account will show a debit balance of \$2,325, the same as that summarized on the work sheet. Statements prepared from the work sheet for J. J. Bailey appear on pages 530 and 531.

Adjustments may be transferred to the ledger, but nominal accounts may be left open and transactions for the remainder of the fiscal period recorded therein. At the end of the period, then, nominal accounts will reflect activities for the entire fiscal period and statements can be prepared summarizing activities in the usual manner. Any differences that are found during the period between amounts originally stated to

BAILEY  
SHEET  
1954

ENTRIES TO RECORD FIRE LOSS		PROFIT AND LOSS 3 MONTHS ENDED MARCH 31		BALANCE SHEET MARCH 31	
Dr	Cr	Dr	Cr	Dr	Cr
				3,450	
				6,600	
	(h) 18,000			855	
	(i) 5,000			10,000	6,250
(i) 3,125	(j) 8,000			24,000	3,150
(j) 1,050				18,000	6,050
					72,350
			3,200		
		42,200			
		14,680			
		12,250	18,000	300	710
(h) 18,000					
(i) 1,875					
(j) 6,950					
	(k) 12,500	2,325			
	(l) 2,600				
	(m) 8,000				
	(n) 1,400				
(k) 12,500				23,100	
(l) 2,600					
(m) 8,000				1,400	
(n) 1,400					
55,500	55,500	71,500	71,500	88,250	88,510
			255	255	
		71,505	71,505	88,510	88,510

be recoverable from insurance and amounts actually recovered should be charged or credited to the fire loss account, thus correcting this balance to the loss actually sustained

ENTRIES TO ADJUST ACCOUNTS

(a) Profit and Loss	12,250	
Inventory		12,250
(b) Inventory	18,000	
Profit and Loss		18,000
(c) Expenses	165	
Prepaid Insurance		165

(d) Expenses	375	
Allowance for Depreciation – Equipment		375
(e) Expenses	200	
Allowance for Depreciation — Buildings		200
(f) Miscellaneous Prepaid Expenses	350	
Expenses		350
(g) Expenses	710	
Miscellaneous Accrued Expenses		710

J J BAILEY  
BALANCE SHEET  
MARCH 31, 1954

ASSETS

Current assets			
Cash		\$ 3,450	
Trade receivables		6,600	
Estimated amount recoverable from insurance companies		23,100	
Salvage goods		1,400	
Prepaid insurance		855	
Miscellaneous prepaid expense		350	\$35,755
Plant and equipment			
Equipment	\$10,000		
Less Allowance for depreciation	6,250	\$ 3,750	
Buildings	\$24,000		
Less Allowance for depreciation	3,150	20,850	
Land		18,500	43,100
Total assets			<u>\$78,855</u>

LIABILITIES AND PROPRIETORSHIP  
LIABILITIES

Current liabilities		
Trade payables	\$ 6,050	
Miscellaneous accrued expenses	710	
Total liabilities		\$ 6,760

PROPRIETORSHIP

J J Bailey, Capital, January 1, 1954	\$72,350	
Less Decrease per income statement for three months ended March 31, 1954	255	
J J Bailey, Capital, March 31, 1954		72,095
Total liabilities and proprietorship		<u>\$78,855</u>

ENTRIES TO RECORD THE FIRE LOSS

(h) Fire Loss.....	18,000	
Inventory.....		18,000
(i) Fire Loss.....	1,875	
Allowance for Depreciation — Equipment.....	3,125	
Equipment.....		5,000
(j) Fire Loss.....	6,950	
Allowance for Depreciation — Buildings.....	1,050	
Buildings.....		8,000

ENTRIES TO RECORD THE AMOUNTS RECOVERED ON THE FIRE LOSS

(k) Estimated Amount Recoverable from Insurance Companies.....	12,500	
Fire Loss.....		12,500
(l) Estimated Amount Recoverable from Insurance Companies.....	2,600	
Fire Loss.....		2,600
(m) Estimated Amount Recoverable from Insurance Companies.....	8,000	
Fire Loss.....		8,000
(n) Salvage Goods.....	1,400	
Fire Loss.....		1,400

J. J. BAILEY  
INCOME STATEMENT  
FOR THREE MONTHS ENDED MARCH 31, 1954

Sales .....			\$53,250
Cost of goods sold:			
Inventory, January 1, 1954.....		\$12,250	
Purchases.....		42,250	
Goods available for sale.....		\$54,500	
Deduct: Estimated inventory destroyed by fire, March 31 .....		18,000	36,500
Gross profit .....			\$16,750
Expenses.....			14,680
Net income before fire loss.....			\$ 2,070
Deduct: Extraordinary loss from fire:			
	Book Value of Assets Lost	Amount Recoverable from Insurance and Salvage	Net Fire Loss or Gain*
Inventory.....	\$18,000	\$13,900	\$4,100
Equipment.....	1,875	2,600	725*
Buildings.....	6,950	8,000	1,050*
	\$26,825	\$24,500	2,325
Net decrease in capital.....			\$ 255

## QUESTIONS

1. Distinguish between fixed tangible assets and fixed intangible assets.
2. (a) List three intangibles that require no cost amortization under normal conditions. Under what circumstances should such balances be written off, and what accounting procedure should then be followed? (b) List three intangibles that require amortization under normal conditions. Indicate circumstances that might serve to accelerate the amortization process and state the accounting procedures to be followed in such cases.
3. Indicate under what circumstances intangible cost is properly charged to (a) operating expense, (b) extraordinary charges, (c) earned surplus.
4. Harmon Products, Inc. reports plant, equipment, and intangibles on the balance sheet at \$1. The president of the company insists that accounts should be maintained on a conservative basis; hence he has authorized write-downs to the nominal figure. Comment on this practice.
5. (a) What items enter into the cost of a patent developed by a business? (b) What factors should be considered in establishing a schedule for amortization of such patent costs?
6. Master Mechanics, Inc. maintains a shop for experimental work of various kinds. Costs of operating the shop are approximately \$100,000 annually. Occasionally valuable patents are developed for factory use as a result of shop operations. What accounting treatment would you recommend for costs within this department?
7. (a) Under what conditions may goodwill be reported as an asset? (b) The Barker Company engages in a widespread advertising campaign on behalf of new products, charging above-normal expenditures to goodwill. Do you approve?
8. The president of the Baker Company authorizes goodwill of \$50,000 to be established on the books in view of very satisfactory profits reported during the past ten years. Comment on this practice.
9. What factors would one look for to support the existence of goodwill in making the purchase of a business?
10. Describe the procedure to be followed in arriving at a company's excess annual earnings in calculating the amount to be paid for goodwill.
11. Give two methods for arriving at a goodwill valuation, using estimated future business earnings as a basis for such calculations.
12. Wells, Inc. has valuable patent rights that are being amortized over their legal lives. The president of the company feels that such patents are contributing substantially to company goodwill and recommends that patent amortization be capitalized as company goodwill. What is your reaction to this proposal?
13. (a) What are the principal arguments in favor of retaining goodwill on the books at cost? (b) What arguments can be raised in favor of writing off this item?
14. (a) Define (1) leasehold, (2) leasehold improvements. (b) What factors need to be considered in the amortization of costs identified with these intangibles?

15. (a) What items are normally considered to compose the organization costs of a company? (b) Would you approve the inclusion of the following items: (1) common stock discount; (2) first-year advertising costs; (3) first-year loss from operations?
16. Would you recommend that organization costs be written off? Give reasons for your answer.
17. The Wilson Co. acquires without cost a franchise considered to be of great value. How would you recommend that the intangible be reported on the balance sheet?
18. Distinguish between prepaid expenses and deferred charges. Give three examples of each.
19. How would you recommend that the cost of machinery rearrangement be treated in the accounts?
20. (a) What is meant by a "short rate" on a fire insurance policy? (b) Who elects to cancel the policy when the short rate is applied?
21. (a) What is a coinsurance clause and why is it found in policies? (b) Prepare a formula, accompanied by a rule or explanation, for determining the liability of an insurance company when a coinsurance clause is included.
22. Indicate the nature of the charges and the credits that will appear in the fire loss account.

### EXERCISES

1. The Webb Co. develops patents at a cost of \$8,500, and patent rights are granted at the beginning of 1948. It is assumed that the patents will be useful during their full legal life. At the beginning of 1950, the company pays \$5,000 in successfully prosecuting an attempted infringement of these patent rights. At the beginning of 1953, \$15,000 is paid for the acquisition of patents that could make its own patents worthless; the patents acquired have a remaining life of 15 years but will not be used. How should each of the foregoing costs be recorded? What is the patent cost amortization for the years 1948, 1950, and 1953?

2. In analyzing past profits in an attempt to measure goodwill, net earnings of \$200,000 are reported for 1953 after charges and credits for the items listed below. Fixed assets are appraised at 50% above cost for purposes of the sale.

Depreciation of fixed assets	\$20,000
Year-end bonus to president of company	15,000
Gain on sale of securities	20,000
Gain from revaluation of marketable securities	15,000
Write-down of goodwill	20,000
Amortization of patents and copyrights	10,000
Appropriation of profits for possible future contingencies	25,000

What would you suggest is the "normal" earnings figure for purposes of your calculations?

**3. The profits of the Southern Sales Company are stated as follows:**

1949 .....	\$40,000	1952 .....	\$50,000
1950 .....	45,000	1953 .....	55,000
1951 .....	30,000		

Tangible net assets of this company are appraised at \$500,000. This business is to be acquired by the Universal Sales Corporation. What amount shall be paid for goodwill if:

- 8% is assumed to be a normal rate of return on net tangible assets, average excess profits for the last 5 years to be capitalized at 20%?
- 6% is assumed to be a normal rate of return on net tangible assets, payment to be made for average excess profits for 4 years?

**4. The appraised value of net assets of the Melcombe Co. are \$60,000. Average profits for the past 5 years after elimination of extraordinary gains and losses are \$10,000. Calculate the amount to be paid for goodwill under each of the following assumptions:**

- Earnings are capitalized at 12½% in arriving at the business worth.
- A return of 8% is considered normal on net assets at their appraised value; excess earnings are to be capitalized at 12½% in arriving at the value of goodwill.
- A return of 10% is considered normal on net assets at their appraised value; goodwill is to be valued at 4 years' excess earnings.

**5. The Northlake Development Co. constructs a building at a cost of \$150,000, with an estimated life of 50 years, on property leased for a 30-year period at an annual rental of \$5,000. (a) What are the entries in connection with the lease and the building depreciation for the first year? (b) What entries would be made at the end of the twentieth year, assuming that the lessee and the lessor agree to cancel the original lease at this time. (c) What entries would be made at the beginning of the twenty-first year, assuming that the lessee and the lessor agree to the extension of the original lease for 10 years beyond its original life? (d) What entries would be made after termination of the original lease, assuming that the lessee and the lessor enter into a new lease for 30 years?****6. A fire insurance policy on buildings has a face value of \$90,000 and an 80% coinsurance clause. Assuming that buildings have a fair value of \$150,000 on the date of a fire, what amount will be recovered if the fire loss totals are: (a) \$60,000; (b) \$110,000; (c) \$140,000?****7. The York Company purchased a building for \$80,000 on August 1, 1945. Depreciation was recorded at 3% a year. On October 31, 1953, 50% of the building was destroyed. On this date the building had a fair market value of \$100,000. A policy for \$60,000 was carried on the building, the policy containing a 75% coinsurance clause. What entries would be made to record (a) the loss from destruction of the building, and (b) the probable collectible amount on the insurance? (Assume that the company's fiscal period is the calendar year.)****8. Part of the buildings owned by the Morris Manufacturing Co. are destroyed by fire. Buildings are carried on the books at a value of \$60,000;**

their sound value on the date of the fire is established at \$120,000. Assuming that insurance policies contain an 80% coinsurance clause, give the amounts recoverable from each insurance company assuming fire loss and policies as follows.

- (a) One half of buildings are destroyed.  
Policies are carried as follows: with A Co..... \$50,000  
with B Co..... 30,000
- (b) Buildings are wholly destroyed.  
Policies are carried as follows: with A Co..... \$75,000  
with B Co..... 50,000
- (c) Buildings are wholly destroyed; recoverable salvage is estimated at \$12,000.  
Policies are carried as follows: with A Co..... \$60,000  
with B Co..... 40,000

### PROBLEMS

**18-1.** The Barnard Corporation assembles the following data relative to the Flexton Co. in determining the amount to be paid for the net assets and goodwill of the latter company:

Assets at appraised value (before goodwill).....	\$120,000
Liabilities.....	35,000
Capital.....	<u>\$ 85,000</u>
Net earnings (after elimination of extraordinary items):	
1949 .....	\$10,000
1950 .....	11,500
1951 .....	15,000
1952 .....	12,500
1953 .....	13,500
	<u>\$62,500</u>

*Instructions:* Calculate the amount to be paid for goodwill under each of the following assumptions:

- (1) Average earnings are capitalized at 12% in arriving at the business worth.
- (2) A return of 10% is considered normal on net assets at appraised value; goodwill is valued at 5 years' excess earnings.
- (3) A return of 8% is considered normal on net assets at appraised value; excess earnings are to be capitalized at 15%.
- (4) Goodwill is valued at the sum of the profits of the last 3 years in excess of a 10% annual yield on net assets. (Assume that net assets are the same for the 3-year period.)

**18-2.** The Bellamy Co. assembles the following information relative to the Sears Corporation in considering the purchase of the assets of the latter company:

**SEARS CORPORATION**  
**BALANCE SHEET**  
**DECEMBER 31, 1953**

	PER CORPORATION'S BOOKS	AS ADJUSTED BY APPRAISAL AND AUDIT
<b>ASSETS</b>		
Current assets . . . . .	112,000	98,600
Plant and equipment . . . . .	400,000	375,000
Investments . . . . .	60,000	35,000
Goodwill . . . . .	100,000	100,000
	<b>672,000</b>	<b>608,600</b>
<b>LIABILITIES AND CAPITAL</b>		
Current liabilities . . . . .	40,000	40,000
Long-term debt . . . . .	250,000	250,000
Capital stock . . . . .	200,000	200,000
Earned surplus . . . . .	182,000	118,600
	<b>672,000</b>	<b>608,600</b>

**ANALYSIS OF EARNED SURPLUS**

	PER CORPORATION'S BOOKS	AS ADJUSTED BY APPRAISAL AND AUDIT
Surplus, January 1, 1951 . . . . .	122,180	73,600
Loss on sale of investments, 1951 . . . . .	4,380	6,600
	<b>117,800</b>	<b>67,000</b>
Net income, 1951 . . . . .	33,000	26,000
	<b>150,800</b>	<b>93,000</b>
Dividends, 1951 . . . . .	12,000	12,000
	<b>138,800</b>	<b>81,000</b>
Net income, 1952 . . . . .	27,500	29,800
	<b>166,300</b>	<b>110,800</b>
Dividends, 1952 . . . . .	12,000	12,000
	<b>154,300</b>	<b>98,800</b>
Net income, 1953 . . . . .	39,700	31,800
	<b>194,000</b>	<b>130,600</b>
Dividends, 1953 . . . . .	12,000	12,000
	<b>182,000</b>	<b>118,600</b>

*Instructions:* (1) Calculate the amount to be paid for goodwill to the nearest \$100, assuming that (a) earnings of the future are expected to be the same as average normal earnings of the past 3 years, and (b) 6% is accepted as a reasonable return on net assets other than goodwill as of December 31, 1953, and average earnings in excess of 6% are capitalized at 15% in determining goodwill.

(2) Give the entry on the books of the Bellamy Co., assuming purchase of the assets of the Sears Corporation and assumption of their liabilities on the basis as indicated in (1). Cash is paid for net assets acquired.

**18-3.** The following data are assembled for the Peerless Bakers, Inc. and the Sublime Baking Co. as of July 1, 1953, in connection with a proposed merger of the two companies:

	PEERLESS BAKERS, INC.	SUBLIME BAKING CO.
Net assets other than goodwill per books as of July 1, 1953 . . . . .	\$230,000	\$210,000
Average net earnings per books, July 1, 1948 — June 30, 1953 . . . . .	33,000	21,500

It is agreed that the values of the respective assets contributed, including the intangible asset goodwill, are to be determined on the following basis: 10% is to be considered a reasonable return on the net assets other than goodwill; average earnings for the period 1948-1953 in excess of 10% of the assets of July 1, 1953, are to be capitalized at 20% in determining goodwill. However, the following adjustments are to be considered before determining the respective values:

- (1) Buildings of the Peerless Bakers, Inc. are estimated to be worth \$25,000 more than book value. Buildings have a remaining life of 20 years.
- (2) The Sublime Baking Co. wrote off organization costs of \$13,500 against income in 1950.
- (3) The Sublime Baking Co. included in earnings a loss of \$1,500 resulting from a fire in 1951 and a gain of \$3,150 on the acquisition and retirement of bonds in 1952 at a cost less than the book value of the liability.

*Instructions:* Prepare a statement to show for each party to the merger the determination of the amounts to be paid for (1) net assets other than goodwill and (2) goodwill.

**18-4.** Net income and capital balances for a 5-year period for Tourist Hotels, Inc. follow:

YEAR	NET INCOME	CAPITAL AT END OF YEAR
1949	\$ 40,000	\$380,000
1950	68,000	405,000
1951	85,000	444,000
1952	89,000	496,000
1953	101,000	511,000

The Seashore Resorts Co. agrees to purchase Tourist Hotels, Inc. and makes cash payment for the assets on the following basis:

6% is considered a normal return on hotel investments.

Payment for goodwill is to be calculated by capitalizing at 20% the average annual earnings that are in excess of 6% of average annual capitals.

*Instructions:* Give the entry that would be made on the books of the Seashore Resorts Co. to record the acquisition of the assets including goodwill of Tourist Hotels, Inc.

**18-5.** A building with a fair market value of \$200,000 is insured under a policy containing a coinsurance clause. Determine the amount that is recoverable from the insurance company under each of the following assumptions:

	AMOUNT OF LOSS	FACE OF POLICY	PERCENTAGE COINSURANCE CLAUSE
(a)	\$120,000	\$180,000	75%
(b)	165,000	160,000	80%
(c)	60,000	105,000	70%
(d)	140,000	80,000	50%
(e)	150,000	120,000	70%
(f)	150,000	120,000	80%
(g)	190,000	150,000	90%
(h)	200,000	250,000	80%

**18-6.** On March 1, 1951, the Wimberly Company took out a \$70,000, 3-year fire insurance policy on a building that was completed at a cost of \$150,000 at the end of June, 1935. The insurance policy contains an 80% coinsurance clause. Depreciation is calculated at 2½% annually. On April 1, 1953, the building was 50% destroyed by fire. The insurance company accepts a sound value for the property of \$125,000 and agrees to make settlement on this basis. The fiscal period for the Wimberly Company is the calendar year.

*Instructions:* Prepare the journal entries necessary as of April 1, 1953, to summarize the foregoing information in the fire loss account and to close this account to Profit and Loss.

**18-7.** The insurance register of the Hill Sales Company shows the following data:

KIND OF PROPERTY COVERED	POLICY DATE	INSURANCE TERM	AMOUNT OF COVERAGE	TOTAL PREMIUM PAID
Store Equipment	Nov. 1, 1951	3 years	\$40,000	\$450
Merchandise	Feb. 1, 1953	1 year	6,000	120
Building	Nov. 1, 1951	3 years	65,000	540*

\*This policy contains an 80% coinsurance clause.

On May 1, 1953, a fire destroyed 80% of the store equipment, all of the merchandise, and 60% of the building. An appraiser determined that the fair values as of May 1, 1953, of the store equipment and the building were \$50,000 and \$100,000 respectively. Since perpetual inventory records were not kept, the value of the merchandise destroyed was estimated on the assumption that sales to date were made at 35% above cost.

A trial balance taken as of May 1, 1953, before adjustments, includes the balances shown below. Depreciation of store equipment is 10% annually; of buildings, 2½% annually. Books were last closed on December 31, 1952.

Merchandise Inventory, January 1, 1953 . . . . .	\$ 16,000	
Store Equipment . . . . .	60,000	
Allowance for Depreciation of Store Equipment . . . . .		\$ 10,000
Building . . . . .	150,000	
Allowance for Depreciation of Building . . . . .		92,000
Sales . . . . .		130,900
Sales Returns and Allowances . . . . .	4,000	
Purchases . . . . .	89,000	
Purchases Returns and Allowances . . . . .		4,000
Freight In . . . . .	2,000	

*Instructions:* (1) Determine the estimated inventory balance at the time of the fire.

(2) Give the entries to bring the accounts up to date and to summarize the fire loss.

(3) Give the entry that would be made to close the fire loss account into Profit and Loss.

18-8. On September 1, 1953, a fire destroyed a portion of the assets of Sullivan Sales Co. Immediately after the fire the trial balance at the top of the following page was obtained.

The fire destroyed one half of the buildings, three fourths of the furniture and fixtures, and all of the merchandise on hand.

The insurance company appraised the property and found that furniture and fixtures had a value of \$24,000 and buildings a value of \$120,000 on the date of the fire. The merchandise destroyed is to be estimated on the assumption that the gross profit percentage on sales in 1952 was maintained in 1953. Sales in 1952 were \$320,000; the January 1, 1952, inventory was \$21,000; and the purchases in 1952 were \$236,000. It is also estimated that store supplies of \$120 and office supplies of \$205 were on hand and were destroyed at the time of the fire.

The insurance register disclosed the following information:

PROPERTY COVERED	POLICY DATE	TERMS	COVERAGE	PREMIUM PAID
Furniture and				
Fixtures	July 1, 1951	3 years	\$15,000	\$360
Buildings	Jan. 1, 1952	3 years	80,000	720*
Merchandise	Jan. 1, 1953	1 year	20,000	345

\*This policy contains an 80% coinsurance clause.

## SULLIVAN SALES CO.

## TRIAL BALANCE

SEPTEMBER 1, 1953

Cash	\$ 18,850	
Notes Receivable	23,800	
Accounts Receivable	29,005	
Merchandise Inventory, January 1, 1953	24,200	
Store Supplies	410	
Office Supplies	600	
Unexpired Insurance	1,005	
Furniture and Fixtures	30,000	
Allowance for Depreciation of Furniture and Fixtures		\$ 8,900
Buildings	120,000	
Allowance for Depreciation of Buildings		26,400
Land ..	30,000	
Notes Payable		10,000
Accounts Payable		15,440
6% Bonds Payable		50,000
Capital Stock		100,000
Earned Surplus		30,990
Sales		250,200
Sales Returns	2,200	
Purchases	169,550	
Freight In	3,100	
Purchases Returns		2,410
Selling Expenses	28,930	
General and Administrative Expenses	11,905	
Purchases Discounts		2,260
Interest Income		505
Sales Discounts	1,410	
Interest Expense	2,140	
	\$497,105	\$497,105

Depreciation rates are: furniture and fixtures, 10% a year; buildings, 3% a year.

On September 1 there is accrued interest on notes receivable of \$200, accrued interest on notes and bonds payable of \$410, and accrued selling expenses of \$250.

*Instructions:* (1) Prepare a work sheet with pairs of columns for: (a) account balances as of September 1, 1953, (b) the adjustments necessary to bring the accounts up to date; (c) the adjustments necessary to record the fire loss, (d) profit and loss information (including regular activities and fire loss data) for the period January 1-September 1, and (e) balance sheet data on September 1. (All operating expenses are summarized in selling expense and general and administrative expense controlling accounts; depreciation of buildings, depreciation of furniture and fixtures, and insurance are regarded as general and administrative expenses).

(2) Prepare an income statement and a balance sheet.

(3) Give the entries to bring the accounts up to date and to close the accounts.

18-9. As of January 1, 1944, Henry M. Garfield leased for 10 years a building to be used as a retail store. His lease provided that annual rent payment was to be based on gross sales. On sales up to \$150,000 per year the rate was to be 3%. On any sales in excess of \$150,000 per year, the rate was to be 2%. However, during the first 5 years of the term of the lease, the annual rental was to be a minimum of \$4,000 per year, after which the minimum was to be increased by  $12\frac{1}{2}\%$ .

The lease further provided that if, in any one year, the rent based on sales did not equal the minimum annual rental, the minimum would be payable, but the amount paid solely as a result of such minimum could be applied in reduction of the next year's rent to the extent that the next year's rent exceeded the minimum for that year.

Gross sales by years, including 1953, were as follows:

1944	.....	\$ 96,000	1949	.....	\$141,000
1945	.....	129,000	1950	.....	165,000
1946	.....	148,000	1951	.....	142,000
1947	.....	161,000	1952	.....	170,000
1948	..	124,000	1953	.....	197,000

*Instructions:* (1) Compute the amount of rent payable each year under the terms of the lease.

(2) Discuss the treatment in the financial statements of any amounts payable under the provision for payment of a minimum amount of rent. (A.I.A. adapted)

18-10. The Casey Wholesale Company lost its entire inventory of merchandise and its furniture and fixtures by fire early in January, 1954, before completing the physical inventory that was being taken as of December 31, 1953. The following information was taken from the books of the company as of December 31, 1951, 1952 and 1953:

	DECEMBER 31, 1951	DECEMBER 31, 1952	DECEMBER 31, 1953
Inventory, January 1	\$ 35,304	\$ 42,380	\$ 45,755
Purchases	160,842	164,426	174,433
Purchases returns and allowances	9,163	8,021	10,015
Sales	185,904	196,603	203,317
Sales returns and allowances	3,325	2,402	2,212
Wages	15,271	17,743	18,356
Salaries	7,500	8,000	9,000
Taxes other than income	2,647	3,732	3,648
Rent	4,800	5,400	5,400
Insurance	915	967	982
Light, heat, and water	1,012	1,134	1,271
Advertising	2,875	4,250	2,680
Interest expense	3,365	2,755	3,020
Depreciation expense	1,125	1,255	1,280
Furniture and fixtures, net of depreciation	9,150	10,065	10,570
Miscellaneous expenses	6,327	6,634	6,897

The company maintained the following concurrent policies, each containing an 80% coinsurance clause:

	POLICY ON STOCK	POLICY ON FURNITURE
A Company	\$20,000	\$2,000
B Company	15,000	3,000
L and D Company	10,000	3,000

*Instructions:* (1) From the above information, estimate the book amount of the inventory destroyed by the fire, assuming that there were no transactions after December 31, 1953.

(2) Based on the inventory estimate prepared in (1) and the book value of furniture and fixtures, determine the amount due from each insurance company in settlement of the total loss of the assets under the three policies listed.

(3) Assuming that the fire loss was 50% of the amounts used in (2), determine the amount due from each company under the same three policies. (A.I.A. adapted)

**18-11.** Boyle & Hancock, retail dry goods merchants, operated a cash store, no credit being extended to customers. The business was conducted as a partnership in which Boyle had a two-thirds interest and Hancock a one-third interest (capital as well as profits). The accounts were currently kept on a cash basis, but at the end of each year they were adjusted to the accrual basis. At that time the profits were divided in the above ratio and were credited to the partners' capital accounts.

Life insurance was carried in the amount of \$10,000, payable to the partnership upon the death of either member. The premiums paid were charged to expense; as the policies were for term insurance, there were no surrender values.

The stock of merchandise was insured for \$45,500 and the store and office fixtures for \$9,500. The two policies were carried with different companies, and both were written with an 80% coinsurance clause.

A fire occurred in the early morning hours of February 1, 1953, in which Mr. Boyle lost his life. The fixtures were a total loss, but part of the merchandise was salvaged and was agreed with the adjusters to be worth \$17,000. A few days after the settlement it was sold for \$17,500.

The books of account had been saved and were used as an aid in arriving at a settlement of the fire loss. The following trial balance was drawn off before any adjustments had been made:

Cash	\$ 20,256 57	
Inventory, December 31, 1952	61,328 20	
Store and office fixtures	18,000 00	
Reserve for depreciation		\$ 7,230 00
Unexpired insurance	280 00	
Accounts payable		7,928 75
Boyle, capital		58,475 78
Hancock, capital		29,237 89
Sales		15,320 50
Purchases	14,396 15	
Expenses	3,932 00	
	\$118,192 92	\$118,192.92

The books showed that 30% gross profit had been made in the preceding two years, and this percentage was agreed upon with the adjusters as a basis for calculating the value of the inventory. It was also agreed to accept the depreciated book value of the fixtures as their value at the time of the fire.

There had been no capital expenditure in 1953, and depreciation had been provided at the rate of 8% per annum to December 31, 1952.

The item of unexpired insurance was carried forward from December 31, 1952, being applicable to the succeeding eight months. The short-rate cash value of \$210 was recovered on the fire insurance policy. The balance of the unexpired insurance was recorded as a fire loss. All liabilities outstanding on January 31, 1953, had been recorded.

The fire loss was determined on the basis of the foregoing data and in accordance with the terms of the policies, and the entire amount thus agreed upon was collected in February. Also the life insurance was promptly settled in that month.

The firm then paid its liabilities and dissolved after dividing the cash — its only remaining asset — between the two owning interests.

*Instructions:* Prepare a columnar work sheet, clearly showing the adjustment of the above trial balance in accordance with the data given, the operating results in the month of January as distinct from the fire loss, the amount of the fire loss, and the final liquidation of assets and liabilities other than cash, thus leaving on the books only the cash and the two capital accounts. Submit calculations of the inventory value on the date of the fire and amounts recoverable as a result of the fire loss. (A.I.A. adapted)

**18-12.** The retail store of James Cox was destroyed by fire on March 20, 1953, and only relatively few items were salvaged. From the general ledger, the one book of account saved, the following figures were abstracted as of February 28:

Cash in Bank . . . . .	\$ 5,285.01	
Petty Cash . . . . .	250.00	
Accounts Receivable . . . . .	53,483.82	
Merchandise . . . . .	106,836.38	
Fixtures . . . . .	10,543.26	
Allowance for Depreciation of Fixtures . . . . .		\$ 8,672.77
Bank Loan Payable . . . . .		10,000.00
James Cox, Capital . . . . .		130,251.20
Sales . . . . .		59,977.39
Expenses . . . . .	32,502.89	

The last fiscal closing was October 31, 1952.

Correspondence with creditors revealed unrecorded obligations to wholesale houses as of March 20 amounting to \$17,100.60, and an inspection of checks returned from the bank at the end of March, \$22,924.83, indicated cash purchases of merchandise from March 1–20 of \$15,267.82, the balance representing cash withdrawals by Mr. Cox. Merchandise in transit on March 20 was recovered by suppliers and not billed. Bank deposits during that period, as shown by the bank statement, amounted to \$20,929.64 and, with the exception of a refund of \$200.25 on March 2

from a merchandise creditor, which Mr. Cox recalls that he deposited shortly thereafter, these may be assumed to be payments on account by customers. Indebtedness acknowledged by customers totaled \$52,876.45, but it is estimated that \$10,000 more that is due from them will never be acknowledged or recovered. Of the acknowledged indebtedness, \$1,000 will probably be uncollectible. Returns to suppliers, not yet accounted for by them, amounted to \$2,503.72, of which it is estimated that, in line with similar claims in the past, no more than half will ultimately be allowed.

The merchandise stock was insured for \$50,000. An agreement has been reached with the insurer whereby the claim of the insured (a) will be based on the assumption that the arithmetical average of the two gross-profit ratios for the fiscal years ended October 31, 1951 and 1952, was in effect during the 4 $\frac{2}{3}$  months ended March 20, 1953, and (b) will be paid, up to the face value of the policy, in accordance with your computation of the cost of the merchandise destroyed. The inventories on October 31, 1950, 1951, and 1952, were \$69,250, \$70,485, and \$57,611 respectively; the net purchases for the two fiscal years ended in 1951 and 1952 were \$89,510 and \$74,030; and the net sales were \$160,500 and \$170,400.

Additions to the fixtures account during the current fiscal year have been \$300; depreciation at the rate of 10% per year (5% per year on additions) should be allowed for the current fractional year. (For depreciation purposes, the fractional year is assumed to be 5 months.)

Salvaged items were:

- (a) Fixtures, sold to secondhand dealer with the approval of the insurer, for \$200; these fixtures were insured for \$500, which will be collected in full.
- (b) Petty cash box containing cash and stamps amounting to \$103.
- (c) Merchandise: sold to a dealer in salvage stocks, \$5,264.53; sold at auction, \$12,821.17.

The balance in the proprietor's account on October 31, 1952, was \$140,716.38.

*Instructions:* (1) Calculate the amount of the inventory loss resulting from the fire.

(2) Prepare the journal entries necessary to reflect the transactions, etc. that took place between February 28 and March 20, 1953, distinguishing carefully between ordinary operations and the losses occasioned by the fire.

(3) Prepare a work sheet with pairs of columns for: (a) the general ledger account balances as of February 28, 1953, (b) the adjustments necessary to bring the accounts up to date, (c) the adjustments necessary to record the fire loss, (d) the profit and loss figures (including regular activities and fire loss data) for the period November 1-March 20, and (e) balance sheet data on March 20.

(4) Prepare a statement of the proprietor's equity as of March 20, 1953. (A.I.A. adapted)

# Long-Term Liabilities

### LONG-TERM DEBT

Liabilities that do not call for the use of funds currently for their liquidation constitute long-term or fixed obligations. Long-term debt includes long-term notes and bonds as well as long-term advances from affiliates. Notes and bonds may be unsecured or they may be secured by liens on a company's securities, equipment, or real estate. Normally the obligation is designated in terms of the security pledged on it. For example, obligations may be termed equipment notes, collateral trust bonds, first mortgage bonds, debenture bonds, etc. Both notes and bonds provide for interest at regular intervals and the return of principal at some fixed future date.

### BONDS PAYABLE

Borrowing through bonds means the issue of a number of certificates of indebtedness, since the total loan cannot normally be obtained from a single source. Bond certificates may represent equal parts of the loan or they may be of varying denominations. Bonds of the business unit are most commonly found in \$1,000 denominations that are referred to as par, face, or maturity values. Bonds may be subject to call by the corporation under certain conditions. On the other hand, bonds may be convertible into some other class of security at the option of the bondholder. An earlier discussion of long-term investments made reference to the various classes of bonds and their special features.

The contract between the corporation and the bondholders is known as the *bond indenture*. Ordinarily bonds can be issued only after formal authorization by a majority of the stockholders, and issuance must conform with regulations of the state in which the company is incorporated. Bonds may be sold by the corporation directly to investors, or they may be underwritten by investment bankers. The underwriters may contract to purchase at a stated price the entire bond issue or only that part of the issue which is not disposed of by the company, or they may agree simply to manage the sale of the security on a commission basis.

Funds to meet short-term needs are normally raised through the issue of short-term notes. Long-term requirements are normally financed through the issue of capital stock or bonds. The issuance of

bonds instead of stock may prove attractive to present corporate owners for the following reasons: (1) the charge against earnings for bond interest would normally be less than the charge for dividends that would result from the issue of preferred stock or the dilution in earnings that would result from the issuance of additional common stock; (2) present owners continue in full control of the corporation; and (3) bond interest is a deductible item in arriving at taxable income while dividends are not, hence the net charge to the stockholders for bond financing can be viewed as the interest paid less the resulting reduction in income taxes. But certain limitations and disadvantages of bond financing must not be overlooked. Satisfactory bond financing is possible only when a company is in a healthy financial condition and can offer adequate security to a new creditor group. Furthermore, it must be recognized by owners that interest on bonds accrues and requires payment regardless of earnings and financial position. With operating losses and the inability of a company to raise sufficient funds to meet the periodic interest requirements, bondholders may act to take over company properties. To avoid such a possibility, some corporations have issued income bonds that require the payment of interest only to the extent that periodic earnings of the company can meet interest requirements. Such bonds, which bear a close resemblance to preferred stock insofar as the conditional income feature is concerned, have frequently been used in the case of railroad reorganizations.

**RECORDING THE  
BOND ISSUE**

It has already been suggested that the sales price of a bond varies with the interest rate that it offers as compared with the prevailing market rate. Bonds will sell at face value or par if the interest rate specified is the same as the prevailing market rate on the date of issue; bonds will sell at more than face value when their interest rate exceeds the market rate, and will realize less than face value when their interest rate is less than the market rate. Although bond investments are normally recorded at cost, it is usually desirable to show an obligation in the form of bonds at its face value — the amount that the company must pay at maturity. Hence, when bonds are issued at an amount other than face value, bonds payable are reported at their face value and a bond discount or premium balance is established for the difference between cash proceeds and bond face value. The discount or premium balance is written off to Bond Interest Expense over the life of the bond issue, periodic adjustments thus correcting interest expense to the effective interest cost on the obligation.

When property is received in payment for bonds, the property should be recorded at its fair market value or at the cash amount at which the bonds would sell, whichever is more clearly determinable; bond premium or discount is recognized for the difference between the face value of the bonds issued and the asset acquired. Satisfactory measurement of future profit and loss is possible only with appropriate recognition of the bond discount or premium related to such an exchange.

When disposal of an entire bond issue does not take place at one time, there are two methods that may be employed in accounting for the sales: (1) only bonds outstanding may be recorded; (2) bonds unissued as well as bonds outstanding may be recorded. To illustrate the two methods, assume that bonds of \$1,000,000 are authorized, bonds to be sold at different times as cash is required. Entries may be made as follows:

Transaction	(1) If only bonds outstanding are recorded	(2) If bonds unissued are recorded
JAN. 15, 1953 Received permission to issue \$1,000,000 first mortgage bonds. Bonds are dated March 1, 1953, and mature in 10 years.	No entry	Unissued Bonds . . . 1,000,000 Bonds Payable . . . 1,000,000
MAR. 1, 1953 Sold bonds of \$500,000 at 101½.	Cash . . . 507,500 Bonds Payable . . . 500,000 Premium on Bonds Payable . . . 7,500	Cash . . . 507,500 Unissued Bonds . . . 500,000 Premium on Bonds Payable . . . 7,500
SEPT. 1, 1953 Sold bonds of \$300,000 at 99½.	Cash . . . 298,500 Discount on Bonds Payable 1,500 Bonds Payable . . . 300,000	Cash . . . 298,500 Discount on Bonds Payable 1,500 Unissued Bonds . . 300,000

Use of the first method above provides for the recording of bonds payable only when the bonds are sold. The second method provides for the recognition of bonds authorized and bonds unissued. The sale of bonds is recorded by a subtraction from the unissued balance; bonds outstanding are determined at any time by subtracting the unissued balance from the bonds payable balance.

Regardless of the method employed in accounting for the issue, bonds authorized but unissued should be disclosed in reporting bonds payable on the balance sheet. Such unissued bonds represent a source of additional cash either through their sale or through their pledge as security on other independent loans without further mortgaging of properties or bond authorization. Bonds outstanding and the re-

maining authorization in the previous example may be reported on the balance sheet in the following manner:

Long-term debt:	
6% first mortgage bonds, due March 1, 1963....	\$ 1,000,000
Deduct unissued bonds.....	200,000
	<hr/>
Bonds outstanding.....	\$800,000

It would be possible to report only the bonds outstanding, the amount unissued being reported parenthetically or by supplementary note. Data concerning bond interest, maturity, and security features should also be provided in reporting the obligation.

Subscriptions may first be obtained for bonds. Upon collection of the full subscription amount, bonds are issued. To illustrate the accounting for subscriptions, assume that 3% bonds of \$500,000 are authorized. An investment syndicate purchases bonds of \$300,000 at 98, and the balance of the amount authorized is to be sold by the corporation directly to individuals whenever funds are needed. Officers of the company subscribe to bonds of \$100,000 at 98 and pay 25% of the subscription price. The remaining 75% is collected on officers' subscriptions of \$80,000, and bonds fully paid for are issued. Entries are made as follows:

Transaction	If only bonds outstanding are recorded	If bonds unissued are recorded
Received permission to issue bonds of \$500,000 (500 bonds, \$1,000 par).	No entry	Unissued Bonds . . . . .500,000 Bonds Payable . . . . .500,000
Sold 300 bonds to investment syndicate at 98.	Cash . . . . .294,000 Discount on Bonds Payable 6,000 Bonds Payable . . . . .300,000	Cash . . . . .294,000 Discount on Bonds Payable 6,000 Unissued Bonds . . . . .300,000
Received subscriptions for 100 bonds at 98. Received 25% down payment. Received: 25% of \$98,000, or \$24,500 Receivable: 75% of \$98,000, or 73,500 \$98,000	Cash . . . . .24,500 Bond Subscriptions Receivable . . . . .73,500 Discount on Bonds Payable . . . . .2,000 Bonds Payable Subscribed . . . . .100,000	Cash . . . . .24,500 Bond Subscriptions Receivable . . . . .73,500 Discount on Bonds Payable . . . . .2,000 Bonds Payable Subscribed . . . . .100,000
Received 75% balance due on bonds of \$80,000 subscribed for at 98. Received: 75% of \$78,400, or \$58,800.	Cash . . . . .58,800 Bond Subscriptions Receivable . . . . .58,800	Cash . . . . .58,800 Bond Subscriptions Receivable . . . . .58,800
Issued 80 bond certificates to paid-up subscribers.	Bonds Payable Subscribed . . . . .80,000 Bonds Payable . . . . .80,000	Bonds Payable Subscribed . . . . .80,000 Unissued Bonds . . . . .80,000

In reporting bonds on the balance sheet in the above examples, bonds issued are increased by bonds subscribed. The bond transactions shown above are summarized as follows on the balance sheet:

Long-term debt:

Bonds payable . . . . .	\$500,000
Deduct: Unissued bonds . . . . .	120,000
<hr/>	
Bonds issued . . . . .	\$380,000
Add: Bonds subscribed . . . . .	20,000
<hr/>	
Bonds issued and subscribed . . . . .	\$400,000

The account Bond Subscriptions Receivable represents a claim against subscribers and is properly reported as a current asset when current collection is anticipated and funds are to become available for current purposes. In the event that bond proceeds are to be applied to some noncurrent purpose, neither the receivable nor the cash received from the issue of bonds is regarded as current. Terms of the bond issue, for example, may require that bond proceeds be applied to the retirement of other debt or the acquisition of plant and equipment. Under such circumstances, bond cash as well as claims against subscribers should be reported as noncurrent items with appropriate reference to their ultimate application.

A discount on the sale of bonds is ordinarily reported on the balance sheet as a deferred charge on the theory that the discount is the equivalent of deferred interest that is properly used as an addition to interest charges of future periods. A premium on the sale of bonds is ordinarily reported as a deferred credit on the theory that it is the equivalent of an interest advance by bondholders that is properly used as a credit offset to interest charges of future periods.

While the foregoing are the prevailing practices, it is appropriate to consider either a discount or a premium balance as a valuation account identified with bonds payable. The bond obligation is then reported at its face value minus a discount or plus a premium. Such procedure is fully supportable in theory and parallels that used in accounting for investments in bonds. The bond sales price, here, determines the amount of the obligation to be reported at the time of the issue, and this amount moves gradually to the bond maturity value as amortization of discount and premium balances takes place. Bonds failing to pay prevailing interest are sold at a discount. Amortization of the discount by charges to the bond interest expense account over the life of the issue increases expense to the effective rate and increases the book value of the obligation; periodic interest is viewed as

(1) the interest paid plus (2) the accrual of the discount to be paid at bond maturity. Payment of bonds at maturity represents a return of the amount borrowed plus settlement of interest deficiencies of past periods recognized in the bond obligation now increased to bond par. Bonds providing for interest payments in excess of the prevailing rate are sold at a premium. Amortization of the premium by credits to the bond interest expense account over the life of the issue reduces expense to the effective rate and reduces the book value of the obligation; periodic interest, here, is viewed as (1) the interest paid less (2) the return of a part of the premium originally advanced by bondholders. Payments of interest in excess of the market rate thus represent settlement of the bond premium; bond payment at maturity cancels the bond obligation now reduced to par.

The sale of bonds normally involves special costs for such items as printing and engraving, taxes, advertising, and underwriting. When bond premium or discount is regarded as a bond valuation item, issuing costs should be summarized separately as a deferred charge and written off systematically over the life of the bond issue. When bond discount or premium is treated as a deferred charge or credit, however, issuing costs are normally treated as deductions from bond proceeds, thus increasing the discount or reducing the premium on the bond issue.

When coupon bonds have been issued, the corporation redeems such coupons on regular interest payment dates. The corporation may make payments to bondholders directly, or payment on coupons may be cleared through a bank or a corporate fiscal agent. No subsidiary records with bondholders are maintained, since coupons are redeemable by bearers. In the case of registered bonds, interest checks are mailed either by the corporation or its agent. When bonds are registered, the bonds payable account requires subsidiary ledger support. The subsidiary record shows holdings by individual bond owners and changes in such holdings. Checks are sent to bondholders of record as of the interest payment date.

When an agent is to make interest payments, the corporation normally provides for a transfer of interest cash to such agent in advance of the payment date. Since the corporation is not freed from its obligation to bondholders until payment has been made by its agent, the cash transfer is recorded by a charge to the account Cash for Bond Interest Deposited with Agent and a credit to Cash. Upon receipt from the agent of paid interest coupons, a certificate of coupon receipt and appropriate disposal, or other required evidence in support of payment, the

corporation charges the bond interest expense account and credits the interest cash account balance.

### PREMIUM AND DISCOUNT AMORTIZATION PROCEDURES

When bonds are issued at a premium, this premium is applied as an offset to bond interest payments over the life of the bonds; the premium account is debited and the bond interest expense account is credited periodically for the premium written off. When bonds are issued at a discount, the discount is added to bond interest payments over the life of the issue; the bond interest expense account is debited and the discount account is credited periodically for the discount written off. As in the case of investments, either the straight-line or the compound-interest or scientific method may be used for amortization purposes. The straight-line method calls for recognition of an equal amount of premium or discount each period. This procedure results in equal periodic interest charges. Use of the compound-interest method calls for charges to operations at the effective interest rate. The effective rate on the bond issue must first be determined. This rate is then applied periodically to the book value of the obligation in arriving at the charge to the bond interest expense account, the difference between the charge to expense and the amount paid being reported as a reduction in the bond premium or discount balance.

To illustrate the application of the straight-line and compound-interest methods of amortization, assume that 5-year bonds of \$100,000, interest at 6% payable semiannually, are sold to yield 5%. This price as shown by bond tables is \$104,376.03. The following tabulations show the differences in results through the use of the two methods:

#### AMORTIZATION OF PREMIUM—STRAIGHT-LINE METHOD

\$100,000 5-YEAR BONDS, INTEREST AT 6% PAYABLE SEMIANNUALLY,  
SOLD AT \$104,376 03

INTEREST PAYMENT	A INTEREST PAID (3% of FACE VALUE)	B PREMIUM AMORTIZATION (1/10×\$4,376.03)	C EFFECTIVE INTEREST (A-B)	D BOND PREMIUM (D-B)	E BOND CARRYING VALUE (\$100,000 + D)
				\$4,376.03	\$104,376.03
1	\$3,000.00	\$437.60	\$2,562.40	3,938.43	103,938.43
2	3,000.00	437.60	2,562.40	3,500.83	103,500.83
3	3,000.00	437.60	2,562.40	3,063.23	103,063.23
4	3,000.00	437.60	2,562.40	2,625.63	102,625.63
5	3,000.00	437.60	2,562.40	2,188.03	102,188.03
6	3,000.00	437.60	2,562.40	1,750.43	101,750.43
7	3,000.00	437.60	2,562.40	1,312.83	101,312.83
8	3,000.00	437.61	2,562.39	875.22	100,875.22
9	3,000.00	437.61	2,562.39	437.61	100,437.61
10	3,000.00	437.61	2,562.39	—	100,000.00

AMORTIZATION OF PREMIUM—COMPOUND-INTEREST METHOD

\$100,000 5-YEAR BONDS, INTEREST AT 6% PAYABLE SEMIANNUALLY,  
SOLD AT \$104,376 03

INTEREST PAY- MENT	A INTEREST PAID (3% OF FACIL VALUE)	B EFFECTIVE INTEREST (2½% OF BOND CARRYING VALUE)	C PREMIUM AMORTIZA- TION (A-B)	D BOND PREMIUM (D-C)	E BOND CARRYING VALUE (\$100,000 + D)
1	\$3,000 00	\$2,609 40 (2½% of \$104,376 03)	\$390 60	\$4,376 03	\$104,376 03
2	3,000 00	2,599 64 (2½% of \$103,985 43)	400 36	3,985 43	103,985 43
3	3,000 00	2,589 63 (2½% of \$103,585 07)	410 37	3,585 07	103,585 07
4	3,000 00	2,579 37 (2½% of \$103,174 70)	420 63	3,174 70	103,174 70
5	3,000 00	2,568 85 (2½% of \$102,754 07)	431 15	2,754 07	102,754 07
6	3,000 00	2,558 07 (2½% of \$102,322 92)	441 93	2,322 92	102,322 92
7	3,000 00	2,547 02 (2½% of \$101,880 99)	452 98	1,880 99	101,880 99
8	3,000 00	2,535 70 (2½% of \$101,428 01)	464 30	1,428 01	101,428 01
9	3,000 00	2,524 09 (2½% of \$100,963 71)	475 91	963 71	100,963 71
10	3,000 00	2,512 20 (2½% of \$100,487 80)	487 80	487 80	100,487 80

The use of the two methods when bonds are issued at a discount is illustrated on this and the opposite page. Here it is assumed that 5-year bonds of \$100,000, interest at 4% payable semiannually, are sold at \$95,625, a price that provides a yield of approximately 5%.

Even though bonds may be redeemable or convertible prior to their maturity dates, redemption or conversion cannot ordinarily be anticipated. Amortization schedules, then, will normally be developed in terms of the full life of the bond issue. Early bond retirement will call for a cancellation of the bond premium or discount relating to the remaining life of the issue as originally conceived.

In the case of investments in bonds straight-line amortization is normally applied as a matter of practical considerations. With a number of investments, purchases and sales within the bond life, and relatively minor differences in straight-line and scientific procedures,

AMORTIZATION OF DISCOUNT—STRAIGHT-LINE METHOD

\$100,000 5-YEAR BONDS, INTEREST AT 4% PAYABLE SEMIANNUALLY,  
SOLD AT \$95,625

INTEREST PAYMENT	A INTEREST PAID (2% OF FACIL VALUE)	B DISCOUNT AMORTIZATION (1/10 X \$1 375)	C EFFECTIVE INTEREST (A + B)	D BOND DISCOUNT (D - B)	E BOND CARRYING VALUE (\$100,000 - D)
				\$4,375 00	\$95,625 00
1	\$2,000 00	\$437 50	\$2,437 50	3,937 50	96,062 50
2	2,000 00	437 50	2,437 50	3,500 00	96,500 00
3	2,000 00	437 50	2,437 50	3,062 50	96,937 50
4	2,000 00	437 50	2,437 50	2,625 00	97,375 00
5	2,000 00	437 50	2,437 50	2,187 50	97,812 50
6	2,000 00	437 50	2,437 50	1,750 00	98,250 00
7	2,000 00	437 50	2,437 50	1,312 50	98,687 50
8	2,000 00	437 50	2,437 50	875 00	99,125 00
9	2,000 00	437 50	2,437 50	437 50	99,562 50
10	2,000 00	437 50	2,437 50	—	100,000 00

## AMORTIZATION OF DISCOUNT—COMPOUND-INTEREST METHOD

\$100,000 5-YEAR BONDS, INTEREST AT 4% PAYABLE SEMIANNUALLY,

SOLD AT \$95,625

INTEREST PAYMENT	A INTEREST PAID (2% OF FACE VALUE)	B EFFECTIVE INTEREST (2½% OF BOND CARRYING VALUE)	C DISCOUNT AMORTIZATION (B - A)	D BOND DISCOUNT (12 - C)	E BOND CARRYING VALUE (\$100,000 - D)
				\$4,375.00	\$95,625.00
1	\$2,000.00	\$2,390.63 (2½% of \$95,625.00)	\$390.63	3,984.37	96,015.63
2	2,000.00	2,400.39 (2½% of \$96,015.63)	400.39	3,583.98	96,416.02
3	2,000.00	2,410.40 (2½% of \$96,416.02)	410.40	3,173.58	96,826.42
4	2,000.00	2,420.66 (2½% of \$96,826.42)	420.66	2,752.92	97,247.08
5	2,000.00	2,431.18 (2½% of \$97,247.08)	431.18	2,321.74	97,678.26
6	2,000.00	2,441.96 (2½% of \$97,678.26)	441.96	1,879.78	98,120.22
7	2,000.00	2,453.01 (2½% of \$98,120.22)	453.01	1,426.77	98,573.23
8	2,000.00	2,464.33 (2½% of \$98,573.23)	464.33	962.44	99,037.56
9	2,000.00	2,475.94 (2½% of \$99,037.56)	475.94	486.50	99,513.50
10	2,000.00	2,486.50 (\$2,000 + \$486.50) <sup>1</sup>	486.50	—	100,000.00

<sup>1</sup>2½% of \$99,513.50 is \$2,487.84. However, use of 5% when the effective rate was not exactly 5% has resulted in a small discrepancy that requires compensation upon recording the final interest payment. On the final payment the discount balance is closed, interest expense being increased by the balance in the discount account.

application of the simpler method is justified. But these considerations do not obtain in the case of the bond issuer. Here, only one or a few issues are involved and amortization schedules can be followed from the time of issuance of the bonds to their retirement. When large issues are involved, the difference between compound-interest amortization and straight-line amortization may be significant. Such circumstances support the use of compound-interest methods that provide for the accurate measure of expense in terms of a changing liability balance. Nevertheless, straight-line amortization is frequently found in practice and is accepted for income tax purposes. Remaining illustrations in this chapter assume the use of straight-line amortization procedures.

**ACCOUNTING FOR BONDS PAYABLE**

When bonds are sold by a corporation after an interest date, the corporation charges the investor for interest from the date interest began to accrue. Bond Interest Expense is credited for the interest included in the sales price; when payment for the full interest period is made, the credit in the bond interest expense account reduces the expense to the interest for the fractional period that bonds were outstanding. The interest charge is to be distinguished from the premium or discount on the bonds which is recorded separately at the time the bonds are issued.

It is possible to make entries for the amortization of bond premium or discount (1) at the time of each interest payment or (2) only at the end of the company's annual period. Normally, it is more convenient to record amortization for a full year at the end of the annual period,

except for the first and last years when fractional parts of a period may be involved.

The entries for issuance of bonds and the payment of interest are illustrated in the example that follows. Assume that the Capital Corporation decides to issue bonds of \$100,000. Bonds are dated September 1, 1953, pay interest at  $4\frac{1}{2}\%$  semiannually on March 1 and September 1, and mature on September 1, 1963. Bonds are sold on December 1, 1953, at \$105,850 plus accrued interest. The corporation adjusts and closes its books at the end of each calendar year. In view of the issue of bonds on December 1, bonds will have a life of only  $9\frac{3}{4}$  years or 117 months. This is the period that will receive the benefits from the use of borrowed money and hence the period to which the bond premium should be related. A schedule may be prepared by the corporation to summarize premium amortization over the bond life. These data can then be used in making periodic adjustments. The amortization schedule follows:

AMORTIZATION SCHEDULE -STRAIGHT-LINE METHOD

PERIOD	A INT PAYMENT (INCLD ADT FOR ACCRU- ALS)	B PREMIUM AMORTIZATION			C EFFEC- TIVE INTER- EST (A-B)	D BOND PRE- MIUM (D-B)	E BOND CARRYING VALUE (\$100,000 + D)
		NO OF MON	FRACTION OF PREM TO BE AMORTIZED	AMT OF PREMIUM AMORTI- ZATION			
Dec. 1 (sales date)-Dec. 31, 1953	\$ 375	1	1/117	\$ 50	\$ 325	\$5,850	\$105,850
Year Ended Dec. 31, 1954	4,500	12	12/117	600	3,900	5,200	105,200
Year Ended Dec. 31, 1955	4,500	12	12/117	600	3,900	4,600	104,600
Year Ended Dec. 31, 1956	4,500	12	12/117	600	3,900	4,000	104,000
Year Ended Dec. 31, 1957	4,500	12	12/117	600	3,900	3,400	103,400
Year Ended Dec. 31, 1958	4,500	12	12/117	600	3,900	2,800	102,800
Year Ended Dec. 31, 1959	4,500	12	12/117	600	3,900	2,200	102,200
Year Ended Dec. 31, 1960	4,500	12	12/117	600	3,900	1,600	101,600
Year Ended Dec. 31, 1961	4,500	12	12/117	600	3,900	1,000	101,000
Year Ended Dec. 31, 1962	4,500	12	12/117	600	3,900	400	100,400
Jan. 1-Sept. 1, 1963 (maturity)	3,000	8	8/117	400	2,600	—	100,000
		117	117/117	\$5,850			

Entries that are made on the corporation books in 1953 and 1954 follow:

Transaction	Entry
DECEMBER 1, 1953	Cash 106,975
Sold \$100,000 of $4\frac{1}{2}\%$ bonds for \$105,850, bonds maturing on September 1, 1963, 10 years from date of issue. Interest is payable semiannually on March 1 and September 1. Sales proceeds were as follows:	Bonds Payable 100,000
	Premium on Bonds Payable 5,850
	Bond Interest Expense. 1,125
Bond sales price \$105,850	
Accrued interest, Sept. 1- Dec. 1 1,125	
\$106,975	

Transaction	Entry
DECEMBER 31, 1953 (a) To record accrued interest for 4 months, and (b) to amortize bond premium applicable to current year. Amortization: bonds outstanding in current year, one month; total life of bond issue, $9\frac{3}{4}$ years or 117 months; current amortization, $1/117$ of \$5,850 = \$50 (one month at \$50).	(a) Bond Interest Expense.....1,500 Accrued Interest on Bonds Payable... 1,500 (b) Premium on Bonds Payable..... 50 Bond Interest Expense... 50
JANUARY 1, 1954 To reverse 1953 accrued interest.	Accrued Interest on Bonds Payable.....1,500 Bond Interest Expense..... 1,500
MARCH 1, 1954 Paid semiannual interest.	Bond Interest Expense...2,250 Cash..... 2,250
SEPTEMBER 1, 1954 Paid semiannual interest.	Bond Interest Expense... 2,250 Cash..... 2,250
DECEMBER 31, 1954 (a) To record accrued interest for 4 months, and (b) to amortize bond premium applicable to current year, 12/117 of \$5,850, or \$600 (or 12 months at \$50 a month, \$600).	(a) Bond Interest Expense.....1,500 Accrued Interest on Bonds Payable... 1,500 (b) Premium on Bonds Payable..... 600 Bond Interest Expense... 600

Entries similar to those for 1954 would be made each year until 1963. On September 1, 1963, when the last interest payment is made, the following entries are made:

Transaction	Entry
SEPTEMBER 1, 1963 (a) To record payment of semiannual interest and principal amount, and (b) to record amortization for the last 8-month period, $8/117$ of \$5,850, or \$400 (or 8 months at \$50 a month, \$400).	(a) Bond Interest Expense..... 2,250 Bonds Payable.....100,000 Cash..... 102,250 (b) Premium on Bonds Payable..... 400 Bond Interest Expense..... 400

**BOND REACQUISITION PRIOR TO MATURITY** Corporations frequently reacquire their own bonds on the market when prices or other conditions make such action favorable. Acquisition in advance of bond maturity calls for the recognition of a gain or a loss based upon the difference between the liability liquidated and the amount paid on such liquidation. When bonds are reacquired at a price that is less

than the book value of the liability, a gain accrues to the corporation; when bonds are reacquired at a price that exceeds the book value of the obligation, a loss results. Payment of accrued interest on the purchase is separately reported as a charge to Bond Interest Expense.

When bonds are reacquired, amortization on such bonds should be brought up to date. The book value of the obligation that is canceled consists of the bond face value as reported in the bonds payable account plus the premium or minus the discount relating to such bonds as of the purchase date. When bonds are purchased and formally canceled, Bonds Payable is debited. When bonds are held for possible future reissue, Treasury Bonds instead of Bonds Payable may be debited. It has already been indicated that treasury bonds cannot be considered an asset. Whether formally retired or kept alive, reacquired bonds are simply the evidence of a liability that has been liquidated. While treasury bonds may represent a ready source of cash, their sale creates new creditors, a situation that is no different from the debt created by any other type of borrowing. Since treasury bonds represent a reduction in bonds payable, they should be recorded at their face value, a gain or a loss being recognized as in the case of formal bond retirement. Treasury bonds at par are then subtracted from the bonds payable balance in reporting bonds issued and outstanding. If treasury bonds are resold at a price other than face value, Cash is debited, Treasury Bonds is credited, thus reinstating the bond liability, and a premium or a discount on the sale of the bonds is recorded, the latter balance to be amortized over the remaining life of this specific bond group. While held, treasury bonds occupy the same legal status as unissued bonds and can be recorded with the latter. Any balance in a treasury bonds or unissued bonds account at maturity is applied against Bonds Payable.

To illustrate bond reacquisition, assume that in the preceding example for the Capital Corporation, bonds of \$10,000 are reacquired at  $98\frac{1}{2}$  by the company on February 1, 1955. Entries in 1955 would be:

Transaction	Entry
JANUARY 1, 1955 To reverse 1954 accrued interest.	Accrued Interest on Bonds Payable ..... 1,500.00 Bond Interest Ex- pense ..... 1,500.00
FEBRUARY 1, 1955 To record reacquisition of own bonds: (a) Amortization on bonds of \$10,000 to date of purchase, 1/117 of \$585, or \$5 (or 1/10 of monthly amortization of \$50, \$5).	(a) Premium on Bonds Payable ..... 5.00 Bond Interest Ex- pense ..... 5.00

Transaction	Entry
(b) Payment of accrued interest, Sept. 1-Feb. 1, \$10,000 at $4\frac{1}{2}\%$ for 5 months.	(b) Bond Interest Expense..... 187.50 Cash ..... 187.50
(c) Gain on bond retirement: Bonds at face value ..... \$10,000.00 Premium on bonds ..\$585.00 Less amortization to date of purchase: 1953 \$ 5 1954 60 1955 5                      70.00              515.00 Book value of bonds..... \$10,515.00 Amount paid on reacquisition of own bonds at $98\frac{1}{2}\%$ ..... 9,850.00 Net gain. . . . . \$ 665.00	(c) Bonds Payable (or Treasury Bonds).....10,000.00 Premium on Bonds Payable.... 515.00 Cash ..... 9,850.00 Gain on Bond Retirement ..... 665.00
MARCH 1, 1955 Paid interest on bonds, face value \$90,000 at $4\frac{1}{2}\%$ for 6 months.	Bond Interest Expense..... 2,025.00 Cash ..... 2,025.00
SEPTEMBER 1, 1955 Paid interest on bonds, face value \$90,000, at $4\frac{1}{2}\%$ for 6 months.	Bond Interest Expense..... 2,025.00 Cash ..... 2,025.00
DECEMBER 31, 1955 (a) To record accrued interest at $4\frac{1}{2}\%$ for 4 months on bonds, face value \$90,000, and (b) to amortize bond premium applicable to current year, $12/117$ of \$5,265 (\$5,850 — \$585), or \$540 (or 12 months at \$45, monthly amortization on bonds outstanding, \$540).	(a) Bond Interest Expense ..... 1,350.00 Accrued Interest on Bonds Payable ..... 1,350.00 (b) Premium on Bonds Payable ..... 540.00 Bond Interest Expense ..... 540.00

The gain or the loss arising from bond reacquisition is ultimately transferred to Earned Surplus. For income tax purposes such a gain is taxable and a loss is deductible in the period of bond reacquisition.

### BOND RETIREMENT AT MATURITY

Most bond issues are payable at the end of a specified length of time. The borrowing corporation may agree to establish a sinking fund for the retirement of bonds. As indicated in an earlier chapter, reacquisition of a company's own bonds by means of a sinking fund calls for the same theoretical considerations with respect to cancellation of account balances relating to the obligation that would obtain in the case of direct bond reacquisition.

A borrowing corporation may also agree that during the life of the bond issue it will not use as a basis for dividends all or a portion of the

surplus available at the time of the issue or becoming available through future earnings. When surplus is so restricted the amount not available for dividends may be transferred to a surplus reserve account. Limitation of dividends until the time bonds are retired decreases the possibility of loss to bondholders.

**SERIAL BONDS**

Foregoing discussions related to *term bonds*, or bonds with a single maturity date. A bond issue may provide for a series of principal payments on periodic due dates. Bonds with such provisions are called *serial bonds*. For example, a \$500,000 bond issue may provide that stated bond blocks of \$25,000 are to be paid off at the end of each year for 20 years. This plan provides for the gradual amortization of the debt.

The issuance of serial bonds makes unnecessary the use of both the bond sinking fund and the surplus reserve described in the previous section. When a sinking fund cannot produce income at a rate equivalent to that paid on the bond issue, serial bonds are advantageous to the issuing corporation. Here funds are applied directly to the retirement of debt, and the interest relating to the portion of the debt retired is thereby terminated.

**AMORTIZATION PROCEDURES FOR SERIAL BONDS**

When serial bonds are issued, the premium or discount amortization schedule calls for recognition of the declining debt principal. Successive bond years cannot be charged with equal amounts of premium or discount because of a shrinking debt and successively smaller interest charges.

As in the case of term bonds, premium or discount amortization is possible by a straight-line procedure or by a compound-interest procedure. The straight-line method as applied to serial bonds is referred to as the *bonds-outstanding method* and calls for decreases in the amortization schedule proportionate to the decrease in the loan balance. The compound-interest method requires that the effective interest rate on the sale of the bonds be first determined; interest expense is then reported at the effective rate applied to the periodic carrying value of the bonds, the difference between the amount reported as expense and the amount paid being reported as a reduction in the premium or discount balance.

*Bonds-Outstanding Method of Amortization.* Amortization by the bonds outstanding method is illustrated in the example that follows. Assume that bonds of \$100,000, dated January 1, 1953, are issued on

this date for \$102,800. Bonds of \$20,000 mature at the end of each year. The bonds pay interest of 4% annually. The company's fiscal year ends on December 31; the fiscal period and the bond year thus coincide. A table showing the amount of premium to be amortized each year is developed as follows:

AMORTIZATION SCHEDULE—BONDS-OUTSTANDING METHOD

YEAR	BONDS OUTSTANDING	FRACTION OF PREMIUM TO BE AMORTIZED	PREMIUM ON ISSUES	ANNUAL PREMIUM AMORTIZATION
1953	\$100,000 00	10/30	\$2,800 00	\$ 933 33
1954	80,000 00	8/30	2,800 00	746 67
1955	60,000 00	6/30	2,800 00	560 00
1956	40,000 00	4/30	2,800 00	373 33
1957	20,000 00	2/30	2,800 00	186 67
	<u>\$300,000 00</u>	<u>30/30</u>		<u>\$2,800 00</u>

The annual premium amortization is found by multiplying the premium by a fraction whose numerator is the number of bond dollars outstanding in that year and whose denominator is the total number of bond dollars outstanding for the life of the issue. As bonds are retired, the premium amortization is correspondingly reduced. For 1953, for example, amortization is calculated as follows:

$$\frac{\$100,000 \text{ (bond dollars outstanding, 1953)}}{\$300,000 \text{ (total bond dollars outstanding, 1953-1957)}} \text{ or } \frac{10}{30} \times \$2,800 = \underline{\underline{\$933.33}}$$

Periodic amortization may be incorporated in a table that summarizes the interest charges and changes in bond carrying values. Such a table follows:

AMORTIZATION OF PREMIUM—SERIAL BONDS  
BONDS-OUTSTANDING METHOD

DATE	A INTEREST PAYMENT (4% OF FACE VALUE)	B PREMIUM AMORTI- ZATION	C INTEREST INCOME (A-B)	D PRINCIPAL PAYMENT	E BOND CAR- RYING VALUE DECREASE (B + D)	F BOND CARRYING VALUE (F-L)
Jan. 1, 1953						\$102,800 00
Dec. 31, 1953	\$4,000 00	\$933 33	\$3,066 67	\$20,000 00	\$20,933 33	81,866 67
Dec. 31, 1954	3,200 00	746 67	2,453 33	20,000 00	20,746 67	61,120 00
Dec. 31, 1955	2,400 00	560 00	1,840 00	20,000 00	20,560 00	40,560 00
Dec. 31, 1956	1,600 00	373 33	1,226 67	20,000 00	20,373 33	20,186 67
Dec. 31, 1957	800 00	186 67	613 33	20,000 00	20,186 67	

*Compound-Interest Method of Amortization.* Bond tables show that the serial bonds described above were sold at a price to yield approximately 3%. The use of this rate results in the following interest charges and changes in bond carrying values:

**AMORTIZATION OF PREMIUM—SERIAL BONDS  
COMPOUND-INTEREST METHOD**

DATE	A INTEREST PAYMENT (4% OF FACE VALUE)	B EFFECTIVE INTEREST (3% OF CARRYING VALUE)	C PREMIUM AMORTI- ZATION (A-B)	D PRINCIPAL PAYMENT	E BOND CAR- RYING VALUE DECREASE (C + D)	F BOND CARRYING VALUE (F-E)
Jan. 1, 1953						\$102,800.00
Dec. 31, 1953	\$4,000.00	\$3,084.00	\$916.00	\$20,000.00	\$20,916.00	81,884.00
Dec. 31, 1954	3,200.00	2,456.52	743.48	20,000.00	20,743.48	61,140.52
Dec. 31, 1955	2,400.00	1,834.22	565.78	20,000.00	20,565.78	40,574.74
Dec. 31, 1956	1,600.00	1,217.24	382.76	20,000.00	20,382.76	20,191.98
Dec. 31, 1957	800.00	608.02*	191.98	20,000.00	20,191.98	

\*3% of \$20,191.98 is \$605.76. However, use of 3% when the effective rate was not exactly 3% has resulted in a small discrepancy that requires compensation upon the final interest payment. On the final payment the premium balance is closed, interest expense being reduced by the balance in the premium account.

The straight-line method of amortization provided for the recognition of uniform amounts of amortization in terms of the par value of bonds outstanding. The compound-interest method provided for a recognition of interest at a uniform rate on the declining debt balance.

**SERIAL BOND  
RETIREMENT PRIOR TO  
MATURITY**

When serial bonds are reacquired prior to their maturity date, it is necessary to cancel the unamortized premium or the discount relating to that part of the bond issue that is liquidated. For example, assume the issuance of serial bonds previously described and amortization of the premium by the bonds-outstanding method as given on page 559. On April 1, 1954, \$10,000 of bonds due January 1, 1956, and \$10,000 of bonds due January 1, 1957, are reacquired at 101 plus accrued interest. The premium for the period January 1-April 1, 1954, relating to retired bonds affects bond interest for the current period and will be written off as an adjustment to expense at the end of the period. The balance of the premium from the date of retirement to the respective maturity date of the series retired must be canceled together with the bond liability balance. The premium balance relating to retired bonds is calculated as follows:

Premium identified with 1954:	$\frac{20,000}{80,000}$	$\times \$746.67 \times 9/12 =$	\$140.00
Premium identified with 1955:	$\frac{20,000}{60,000}$	$\times \$560.00 =$	186.67
Premium identified with 1956:	$\frac{10,000}{40,000}$	$\times \$373.33 =$	93.33
Total premium identified with retired bonds			<u>\$420.00</u>

Bonds, carrying value \$20,420, are retired at a cost of \$20,200, resulting in a gain of \$220. Payment is also made for interest on bonds

of \$20,000 for a three-month period at 4%, or \$200. The entry to record the retirement of bonds and the payment of interest on the series retired follows:

Bonds Payable (or Treasury Bonds) . . . . .	20,000	
Premium on Bonds Payable . . . . .	420	
Bond Interest Expense . . . . .	200	
Cash . . . . .		20,400
Gain on Retirement of Bonds . . . . .		220

An adjusted schedule for the amortization of bond premium is prepared as follows:

**AMORTIZATION SCHEDULE — BONDS-OUTSTANDING METHOD  
ADJUSTED FOR BOND RETIREMENT**

YEAR	ANNUAL PREMIUM AMORTI- ZATION PER ORIGINAL SCHEDULE	PREMIUM CAN- CILLATION ON BOND RETIREMENT	ANNUAL PREMIUM AMORTI- ZATION ADJUSTED FOR BOND RETIREMENT
1953	\$ 933 33		\$ 933 33
1954	746 67	\$140 00	606 67
1955	560 00	186 67	373 33
1956	373 33	93 33	280 00
1957	186 67		186 67
	<u>\$2,800 00</u>	<u>\$420 00</u>	<u>\$2,380 00</u>

Instead of following the procedures illustrated above, it would be possible to calculate the premium cancellation by first determining the premium amortization rate per year on each \$1,000 bond. This is determined from the original amortization schedule as follows:

$$\frac{\$2,800 \text{ (total premium—life of bonds)}}{300 \text{ (total \$1,000 bonds outstanding—life of bonds)}} = \frac{\$9.33\frac{1}{3}}{\text{amortization per \$1,000 bond.}}$$

The premium cancellation, then, is calculated as follows:

Year	No. of \$1,000 Bonds	×	Fractional Part of Year	×	Annual Premium	Total Cancellation
1954	20		$\frac{1}{4}$		\$9 33 $\frac{1}{3}$	\$140 00
1955	20				9 33 $\frac{1}{3}$	186 67
1956	10				9 33 $\frac{1}{3}$	93 33
Total premium identified with retired bonds						<u>\$420 00</u>

**SERIAL BOND AMORTI-  
ZATION PROCEDURES  
WHEN BOND YEAR AND  
FISCAL YEAR DO NOT  
COINCIDE**

When serial bond retirement dates do not agree with the company's fiscal year, the amortization schedule must provide for amortization other than for full annual periods.

To illustrate, assume \$100,000 of 10-year, 5% serial bonds, dated March 1, 1954, are sold on May 1, 1954, at a

discount of \$3,200. Bonds of \$10,000 mature on March 1 of each year. The discount would be amortized over 118 months. An amortization schedule would be prepared as follows:

**AMORTIZATION SCHEDULE WHEN BOND YEAR AND FISCAL YEAR  
DO NOT COINCIDE—BONDS-OUTSTANDING METHOD**

YEAR	BONDS OUT- STANDING		MONTHS OUT- STANDING		BOND MONTH DOLLARS	TOTAL BOND MONTH DOLLARS	FRACTION OF DISCOUNT TO BE AMORTIZED	AMOUNT OF DISCOUNT	ANNUAL DISCOUNT AMORTIZATION
1954	\$100,000	×	8	=	\$800,000	\$ 800,000	$\frac{8}{640}$	\$3,200	\$ 400
1955	{ 100,000 90,000	{ × ×	{ 2 10	{ = =	{ 200,000 900,000	1,100,000	$\frac{11}{640}$	3,200	550
1956	{ 90,000 80,000	{ × ×	{ 2 10	{ = =	{ 180,000 800,000	980,000	$\frac{9}{640}$	3,200	490
1957	{ 80,000 70,000	{ × ×	{ 2 10	{ = =	{ 160,000 700,000	860,000	$\frac{8}{640}$	3,200	430
1958	{ 70,000 60,000	{ × ×	{ 2 10	{ = =	{ 140,000 600,000	740,000	$\frac{7}{640}$	3,200	370
1959	{ 60,000 50,000	{ × ×	{ 2 10	{ = =	{ 120,000 500,000	620,000	$\frac{6}{640}$	3,200	310
1960	{ 50,000 40,000	{ × ×	{ 2 10	{ = =	{ 100,000 400,000	500,000	$\frac{5}{640}$	3,200	250
1961	{ 40,000 30,000	{ × ×	{ 2 10	{ = =	{ 80,000 300,000	380,000	$\frac{3}{640}$	3,200	190
1962	{ 30,000 20,000	{ × ×	{ 2 10	{ = =	{ 60,000 200,000	260,000	$\frac{2}{640}$	3,200	130
1963	{ 20,000 10,000	{ × ×	{ 2 10	{ = =	{ 40,000 100,000	140,000	$\frac{1}{640}$	3,200	70
1964	10,000	×	2	=	20,000	20,000	$\frac{2}{640}$	3,200	10
			118			\$6,400,000	$\frac{118}{640}$		\$3,200

### BOND REDEMPTION

Bond issues with a single maturity date, as well as those with serial maturities, may be issued with provisions making them subject to redemption prior to their maturity dates at the option of the corporation. The inclusion of call provisions in the bond indenture is a feature favoring the issuer. The corporation is in a position to terminate the bond agreement and thus to eliminate future interest charges whenever its financial position makes such action feasible. Furthermore, the corporation is protected in the event of a fall in the market interest rate by being able to retire the old issue with funds acquired through a new issue that pays a lower rate.

Bonds normally provide for payment of a premium in the event of call before maturity. The bondholder is thus offered a compensation in the event that his investment is terminated and he is faced with the problem of fund reinvestment. From the corporation point of view, the premium represents the cost of exercising the option to terminate a contract. When bonds are called, the difference between the book value of the bonds redeemed and the amount paid, including the call premium, is reported as a loss or a gain on such redemption. For example, assume that bonds of a corporation are callable at a 5% premium or at 105. Bonds of \$20,000 are redeemed on this basis. At the time of call, bonds outstanding are shown at \$100,000 and unamortized discount on the issue is \$2,500. The following entry is made:

Bonds Payable (or Treasury Bonds).....	20,000	
Loss on Bond Retirement.....	1,500	
Cash.....		21,000
Discount on Bonds Payable.....		500

**BOND CONVERSION** The conversion of bonds into stock at the option of the bondholder is frequently included in the bond agreement to make the bonds more attractive to buyers. Ordinarily such conversion may take place only within a stated period and under certain specified conditions. It is frequently provided that conversion is possible only on an interest payment date. If corporate activities are successful, the bondholder may participate in this success as an owner by exchanging his bonds for stock; if activities are not successful, the bondholder will continue to hold the bonds and to receive payments as a creditor of the corporation. For example, a corporation may issue \$1,000,000 of 4% bonds that are convertible at the option of the bondholder into 6% preferred stock within a 5-year period. Assume that during this period the operations and the profits of the corporation are such that the regular payment of the 6% dividend rate on preferred stock seems assured and the market value of the stock rises to an amount in excess of the bond value. Under such conditions bondholders will exercise the conversion option to obtain the increased periodic income as well as the security that has the greater value.

In discussing the exchange by an investor of a security whose cost differed from the fair market value of the new one acquired, it will be recalled that two positions were considered:

(1) Market value was assigned to the new asset and a gain or a loss was recognized on the exchange of the original asset. The exchange was considered to complete the transaction cycle for the original asset,

and the new asset was recorded at the amount that would have been required for its purchase.

(2) The cost of the original asset was assigned to the new asset emerging from ownership of the old. While the character of the investment changed, the original cost did not, and this cost was preserved until it could be applied against proceeds from the sale of investment holdings.

The corporation, in viewing the exchange of bonds for capital stock with a market value that differs from the book value of the obligation, may likewise consider two positions:

(1) The issuance of the new security calls for an increase in invested capital equal to the fair market value of the new security issued and for the recognition of a gain or a loss arising from the retirement of the obligation.

(2) The issuance of the new security simply calls for the assignment of the book value of the bondholders' equity to the new equity arising from the exchange.

The increase in capital at the market value of the stock issued can be supported on the grounds that bondholders are actually paid an amount equal to the value of the security given in exchange in terminating the bond contract. The transaction constitutes, in effect, payment to bondholders and the recovery of the redemption price through the issue of new stock. The exchange of stock for bonds closes the transaction cycle relating to bonds and opens a new cycle relating to stock in which stock is recorded at the value it would bring currently. This view recognizes the gain or the loss on conversion as a correction of charges relating to the issue, since it arises from the conversion feature found in the bond contract. Neither advantage nor penalty is assigned to the new stock issue as a result of the original contract to borrow funds.

The assignment of bond book value to the increase in capital is supported on the theory that the corporation is fully aware of the fact that the sales price, while originally identified with bonds, may ultimately represent the consideration identified with stock. Thus, when bondholders exercise conversion privileges, the book value identified with bonds is properly transferred to the security that replaces it.

To illustrate the accounting for an exchange on the books of the corporation, assume the following facts: a \$100,000, 10-year, 4% bond issue dated January 1, 1949, is sold for \$94,000 on that date. Interest is payable semiannually on January 1 and July 1. Conditions of conversion provide that for 5 years after issue a \$1,000 bond may be exchanged for 40 shares of common stock with a par of \$20 per share.

Any accrued interest is to be paid on the date of conversion. A bondholder who owns ten \$1,000 bonds elects to convert these into stock on April 1, 1953, when stock is quoted on the market at 27½.

*Recording Increase in Capital at Market Value of Stock Issued.* The entries to record the conversion if the newly issued stock is to be reported at its sales value follow:

Bond Interest Expense.....	115	
Cash.....		100
Discount on Bonds Payable.....		15
To record interest for the period Jan. 1 - April 1 on \$10,000 .		
of bonds converted into stocks:		
Amount paid, 4% on \$10,000 for 3 months....	\$100	
Discount amortization, ¼ year at \$60 per year..	15	
	<u>\$115</u>	

Bonds Payable.....	10,000	
Loss on Bond Conversion.....	1,345	
Discount on Bonds Payable.....		345
Common Stock (400 shares, par \$20)....		8,000
Premium on Common Stock.....		3,000
Issued 400 shares of common stock in exchange for bonds:		
Value of stock, 400 shares quoted at 27½		
(par, \$20, or \$8,000; premium, 7½, or \$3,000) ..		
	\$11,000	
Book value of bonds on date of conversion:		
Face value.....	\$10,000	
Less discount:		
Discount on date of issuance..	\$600	
Less amortization to date of		
sale, 4½ years at \$60 per year....	255	345
	<u>9,655</u>	
Excess of value of stock issued over book value		
of bonds—loss on bond conversion....		\$ 1,345

It is assumed above that the discount balance is brought up to date when interest is paid on bonds that are converted. It would be possible to recognize discount amortization on this bond lot at the end of the year. The entry to record the conversion, however, would be the same. The carrying value of the bonds as of the date of redemption is canceled, stock issued is recorded at its market value, and a loss on bond conversion is recognized for the difference between the value assigned to the new security and that identified with the old.

*Recording Increase in Capital at Book Value of Bonds Retired.* If the book value of the bonds is to be assigned to capital stock, the entry to record the exchange is made as follows:

Bonds Payable.....	10,000		
Discount on Bonds Payable.....		345	
Common Stock (400 shares, par \$20).....		8,000	
Premium on Common Stock.....		1,655	
Issued 400 shares of common stock in exchange for bonds:			
Book value of bonds on date of conversion, assigned to stock:			
Face value.....	\$10,000		
Less discount:			
Discount on date of issuance..	\$600		
Less amortization to date of			
sale, 4½ years at \$60 per year	255	345	\$9,655
Par value of stock, 400 shares at \$20		8,000	
		—	—
Excess of book value of bonds over par value of			
stock—premium on common stock			\$1,655

It should be observed that total capital is the same regardless of the value assigned to the stock issued in exchange for bonds. However, when market value was used in the first example, earned surplus of \$1,345 was converted into premium on common stock, a part of the corporate invested capital.

### BOND REFUNDING

Funds for the retirement of a bond issue are frequently raised through the sale of a new issue. This is referred to as *bond refunding*. Bond refunding may take place at the maturity of a bond issue. Bond refunding may also be effected prior to the maturity of a bond issue when the interest rate has dropped and the interest savings possible on a new issue will more than offset the special costs of retiring the old issue. To illustrate, assume that a corporation has outstanding 6% bonds of \$1,000,000 callable at 102 and with 10 years to run, and similar 10-year bonds can be marketed currently at an interest charge of only 5%. Under these circumstances it is obvious that it would be advantageous to retire the old issue with the proceeds from a new 5% issue, since the future savings in interest will exceed by a considerable amount the premium to be paid on the call of the old issue. Frequently, the desirability of refunding an issue will not be as obvious as in the preceding instance. In determining whether refunding is warranted in marginal cases, costs of the two issues will have to be compared and other factors, such as the different maturities of the two issues, possible future changes in interest rates, and changed loan requirements will have to be carefully considered.

When refunding takes place before the maturity date of the old issue, the problem arises as to what is to be done with unamortized dis-

count as well as any call premium identified with the old issue. Three positions are taken with respect to disposition of these items:

(1) Bond discount and call premium are considered an extraordinary loss identified with the bonds being canceled.

(2) The items are treated as a charge to be deferred and amortized over the remaining life of the original issue.

(3) The items are treated as a charge to be deferred and amortized over the life of the new issue.

The first position views bond retirement on a refunding operation as any other debt cancellation. Payment of bonds terminates the old bond contract and any loss on such termination is identified with the original loan period. The new bond issue is considered a new venture with only its own costs assignable to future periods. With the cycle of the original bond issue terminated, the recognition of a loss here is considered just as appropriate as the loss recognition on the disposal of a plant and equipment item. A loss on plant and equipment retirement is recognized even though such retirement is accompanied by the acquisition of a new asset; parallel treatment calls for recognition of the loss on bond retirement even though accompanied by the issuance of new bonds. Recognition of the loss on retirement also finds support as a conservative measure, and is the required procedure for income tax purposes.

The second position views unamortized bond discount and redemption premium as the price paid for the option of entering into a new borrowing arrangement whenever this proves profitable. Such costs, then, are properly deferred so that they may be identified with the periods receiving the benefits from refunding the unexpired term of the original issue. The remaining periods covered by the original issue will still realize a savings through reduced interest charges counterbalanced only in part by the amortization of bond discount and redemption premium incurred in the realization of such savings.

The third position views redemption costs as related to new borrowing and hence as distributable over the entire life of the new issue even if this exceeds the life of the original bonds. The decision to refund the issue is made on the basis of the present arrangement as compared with the various alternative borrowing plans that may be available. Any cost relating to the changed financing, then, should be absorbed over the full term of the new issue.

It appears that the strongest argument can be made for the treatment of bond redemption costs as an extraordinary loss in the period of

retirement. Here redemption costs are viewed as costs of terminating an agreement that is no longer favorable rather than as costs for entering into more advantageous arrangements for borrowings. The old loan cycle is considered to have ended; a new loan cycle has begun. To capitalize costs on redemption would lend support to similar capitalization of the unrecovered book value of assets and removal costs when assets are retired upon the acquisition of new assets. Either instance may be better viewed as an entry into a new situation that occasions a full recognition of losses that have accrued in past periods.

The Committee on Accounting Procedure of the American Institute of Accountants in its Bulletin No. 2, "Unamortized Discount and Redemption Premium on Bonds Refunded," indicates a preference for the treatment of refunding costs as a charge over the unexpired term of the old bonds. It also regards the immediate write-off of such costs as acceptable practice. The third position is definitely rejected by the Committee. In the view of the Committee, the decision to refund is made in consideration of the savings involved, savings that are limited to the remaining life of the original issue. Periods beyond the life of the original issue, not a factor in the decision to refund and realizing no benefit from such action, should not be required to carry a part of such refunding costs. In accepting two alternatives the Committee points out, "... the existence of the two alternatives is not to be construed as a reflection on accounting or accountants. It arises from a difference of opinion as to the relative weight to be attached to different objectives and reflects a conflict between two modes of thought."<sup>1</sup>

Recognition of a loss in the accounts as compared with the deferral of refunding costs is illustrated in the example to follow. Assume that 6% bonds of \$250,000 are retired from the proceeds of a new 5% \$300,000 issue. The original issue has 5 years to run; interest has been paid and discount has been amortized, leaving a discount balance of \$3,000 on the date of refunding. Bonds are callable at 102. The new bonds have a 10-year life and are sold at 98. Entries are made as follows:

	If Loss on Refunding Is Recognized	If Costs of Refunding Are Deferred
JULY 1		
Issued bonds of \$300,000 at 98.	<div> <div>Cash 294,000</div> <div>Discount on Bonds Payable 6,000</div> <div>5% Bonds Payable 300,000</div> </div>	<div> <div>Cash 294,000</div> <div>Discount on Bonds Payable 6,000</div> <div>5% Bonds Payable..... 300,000</div> </div>

<sup>1</sup>*Accounting Research Bulletin No. 2, "Unamortized Discount and Redemption Premium on Bonds Refunded,"* September, 1939 (New York: American Institute of Accountants), p. 20.

	If Loss on Refunding Is Recognized		If Costs of Refunding Are Deferred	
<b>JULY 1</b> Redeemed bonds of \$250,000, book value, \$247,000, at 102.	6% Bonds Payable	250,000	6% Bonds Payable	250,000
	Loss on Bond Redemption	8,000	Deferred Refunding Costs	8,000
	Cash	255,000	Cash	255,000
	Discount on Bonds Payable	3,000	Discount on Bonds Payable	3,000
<b>DECEMBER 31</b> Paid semiannual interest.	Bond Interest Expense	7,500	Bond Interest Expense	7,500
	Cash	7,500	Cash	7,500
(a) Discount amortization for 6 months on 10-year life: $1/20 \times \$6,000 = \$300$ .	Bond Interest Expense	300	Bond Interest Expense	300
	Discount on Bonds Payable	300	Discount on Bonds Payable	300
(b) Deferred refunding costs amortization for 6 months on 5-year life: $1/10 \times \$8,000 = \$800$ .	No entry		Bond Interest Expense	800
			Deferred Refunding Costs	800

**DEFERRED CREDITS**

Deferred credits to income represent revenues that are not yet to be recognized but are to be deferred into a future period. The deferred credit arises upon the receipt of cash or the recognition of some other asset in advance of the period in which the asset may be considered to be earned. Cash received or receivables recognized for goods, services, or benefits to be supplied in future periods call for credits to deferred income accounts until commitments are fulfilled. Normally, costs are involved before revenues may be considered as realized and a gain or a loss still remains to be determined in the future.

A deferred credits heading is provided on the balance sheet for deferred income items. The deferred credits section is reported as a part of the liabilities in view of the claims on the business represented by these items.

It has already been suggested that when a deferred income item is to make significant claim upon the existing current assets in the fulfillment of contract commitments, such an item is properly reported as a current liability. The deferred credit classification, then, should be limited to future revenues that will not make significant demands upon current assets. Unearned interest income, for example, may be reported as a deferred credit since it makes no claim on current assets. Leasehold income, when received for a number of years in advance, would also qualify as a deferred credit. Here the deferred income bal-

ance may be considered to be composed of (1) a claim for periodic expenditures for taxes, insurance, repairs, etc., (2) a claim for use of properties involving depreciation of noncurrent assets, and (3) a residual balance of net earnings to be recognized over the life of the lease. The claim that is made upon current assets presently reported, included in group (1), is relatively small and may be disregarded for all practical purposes. Other items that are usually reported under the non-current deferred credits heading on the balance sheet include advances under long-term contracts, premiums received on long-term service and insurance contracts, premiums on bonds payable, and deferred profits on installment sales when profits are to be considered as realized only as installment receivables are converted into cash.

**LONG-TERM  
LIABILITIES ON THE  
BALANCE SHEET**

In reporting long-term obligations on the balance sheet, the nature of the obligations, maturity dates, interest rates, and methods of liquidation should be indicated. When assets have been pledged to secure an obligation, full particulars of the pledge should be indicated either in the description of the liability or in the description of the specific assets pledged. Creditors, both present and potential, are vitally concerned with such data, since in the event of business insolvency, pledged assets must first be applied to the liabilities that they secure. Even though assets and liabilities may be related in some manner, items should not be offset: a mortgage on buildings is reported as a liability, while buildings are reported at their full purchase cost as an asset; the full bond obligation is reported as a liability, while a bond sinking fund is reported as an asset.

Since there is no difference between unissued bonds and treasury bonds, the two may be combined so that potential funds from the bond authorization may be indicated. This total is subtracted from bonds authorized in arriving at bonds issued and outstanding, or only bonds payable outstanding may be shown, treasury and unissued bonds being reported parenthetically. Appropriate disclosure should be made when treasury or unissued bonds have been pledged on loans.

Long-term debt maturing within one year should be reported as a current liability only when retirement will claim current assets. If the debt is to be paid from a sinking fund or is to be retired through some form of refinancing, it would continue to be reported as noncurrent, with a note as to the method to be used in its liquidation.

Long-term obligations other than long-term debt found in the form of mortgages, notes, and bonds are generally listed separately or reported as "Other Liabilities." The deferred credits section is normally

reported as the last of the long-term liability classifications. Contingent long-term debt, such as accommodation endorsements or guarantees in connection with debt of affiliated companies, should be disclosed by appropriate accompanying remarks.

Long-term liabilities may be reported on a balance sheet as of December 31, 1953, as follows:

Long-term debt:

20-year, 4% First mortgage bonds, due January 1, 1965, authorized . . .	\$200,000	
Less unissued and treasury bonds:		
Pledged as security on short-term loans . . . . .	\$25,000	
Held in treasury . . . . .	15,000	40,000
		<hr/>
Bonds issued and outstanding . . . . .		\$160,000
Serial 5% Debentures, due May 1, 1954 to May 1, 1959, inclusive . . .	\$120,000	
Less: May 1, 1954, maturities re- ported in current section . . . . .	20,000	100,000
		<hr/>
Purchase obligations payable 1955 to 1959 . . . . .	55,000	\$315,000
		<hr/>

(Other long-term liabilities:

Estimated employee retirement bene- fits and pensions payable . . . . .	120,000
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Deferred credits:

Customer advances on contracts for service extending until 1959 . . . . .	\$50,000	
Premium on bonds payable . . . . .	5,000	55,000
	<hr/>	<hr/>

Total long-term debt . . . . .		\$490,000
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## QUESTIONS

1. What factors would be taken into consideration in determining whether funds should be raised by bond issue or by the sale of additional stock?

2. Distinguish between:

- Secured and unsecured bonds.
- Callable and convertible bonds.
- Registered and bearer bonds.
- Term bonds and serial bonds.

3. Explain two methods that may be used in recording transactions relating to bond issuance.

4. Describe the nature of the following account balances and indicate how each would appear on the financial statements:

- (a) Bond Subscriptions Receivable
- (b) Premium on Bonds Payable
- (c) Unissued Bonds
- (d) Bonds Payable Subscribed

5. (a) Distinguish between the straight-line and the scientific methods for premium and discount amortization on bonds payable. (b) What method would you recommend? Why?

6. Is it more practical to amortize discount or premium on bonds at each interest date or at the end of the fiscal period? Explain.

7. What amortization policy would you recommend that the issuer follow on bonds that are callable prior to maturity?

8. How would you suggest that the costs relating to the issuance of bonds be recorded?

9. (a) What arguments can you offer for reporting discount on bonds payable and premium on bonds payable as deferred items? (b) What arguments can you offer for reporting these balances as bond valuation accounts?

10. The treasurer for the Gardner Co. proposes that treasury bonds be reported as an asset at the amount paid upon their acquisition. What reply would you make to this proposal?

11. What values may be assigned to capital stock exchanged for bonds in accordance with bond convertible features? What arguments can be made in support of each of the procedures recommended?

12. (a) Describe the bonds-outstanding method for premium or discount amortization. (b) How does this method differ from the compound-interest method applicable under the circumstances?

13. What is meant by refunding a bond issue?

14. Describe three methods for disposing of unamortized bond discount and call premium on bonds retired through refunding. Give arguments pro and con for each method. Which method do you feel has the greatest merit?

15. (a) When would it be proper to report bonds as a noncurrent item even though they mature currently? (b) What precautions should be exercised in such reporting?

16. Comment on the following presentations and indicate what corrections you would make:

- (a) Equipment, cost \$100,000, on which installment notes of \$90,000 are unpaid, is reported on the balance sheet at the company's net equity therein, \$10,000.
- (b) Treasury bonds, face value \$50,000, cost \$56,000 are reported as an asset at cost on the balance sheet.
- (c) Advances from a subsidiary company are reported as a subtraction from the investment in the stock of the company in reporting the net investment in the subsidiary on the balance sheet.

17. The Bingham Corporation combines unissued bonds and treasury bonds and subtracts this total from a bonds authorized total on the balance sheet. Do you support such practice?

## EXERCISES

1. The Majestic Co. has issued 10,000 shares of common stock, par \$100. The company requires additional working capital and finds that it can sell 2,000 additional shares of common at \$100, or it can float a \$200,000 bond issue at par with an interest rate of 4%. Earnings of the company before income taxes have been \$50,000 annually, and it is expected that these will increase 20% (before additional interest charges) as a result of the additional funds. Assuming that the income tax rate is estimated at 40%, which method of financing would you recommend as an original common stockholder? Why? (Show calculations.)

2. The Clark Corporation issues bonds of \$100,000 at 98 plus accrued interest on July 1, 1953. Interest at 4% is payable semiannually on March 1 and September 1, and the bonds mature on March 1, 1963. What entries are required to record (a) the issuance of the bonds on July 1, 1953, (b) the interest payment on September 1, 1953, and (c) the accrued interest and amortization on December 31, 1953?

3. The Workman Corp. received permission to issue \$1,000,000 of 5%, 10-year bonds. The bonds are dated March 1, 1953, and interest is payable at semiannual intervals on March 1 and September 1. Subscriptions for bonds of \$80,000 were obtained on April 1, 1953, at 98. Full payment on subscriptions was made on June 1, 1953, including accrued interest to this date, and bonds are issued. The company's fiscal period is the calendar year. Give the entries that are required for 1953, assuming that the company records unissued bonds in the accounts upon bond authorization.

4. (a) The Taft Corporation issues \$100,000 of 3½% debenture bonds on a basis to yield 3.2% receiving \$102,550. Interest is payable semiannually and the bonds mature in 10 years. What entries would be made for the first two interest payments, assuming premium amortization on interest dates by (1) the straight-line method and (2) the compound-interest method?

(b) If the sale is made on a 4% basis, \$95,912 being received, what entries would be made for the first two interest payments, assuming discount amortization on interest dates by (1) the straight-line method and (2) the compound-interest method?

5. On December 1, 1951, the Miller Company issues 10-year bonds of \$100,000 at 102. Interest is payable on December 1 and June 1 at 6%. On April 1, 1953, the Miller Company retires 10 of its own \$1,000 bonds at 99 plus accrued interest. What entries are made to record (a) the issuance of the bonds, (b) the interest payments and adjustments relating to the debt in 1952, (c) the retirement of bonds in 1953, and (d) the interest payments and adjustments relating to the debt in 1953?

6. The books of the Wesley Co. report the following on its balance sheet on December 31, 1953:

Bonds payable (interest at 4%, payable January 1 and July 1;	
bonds mature January 1, 1960) . . . . .	\$100,000
Bond discount . . . . .	1,650

On January 1, 1954, bonds of \$20,000 were reacquired at  $97\frac{1}{2}$ . Bonds of \$10,000 were resold on October 1, 1954, at  $98\frac{1}{2}$  plus accrued interest. Interest checks on bonds outstanding were mailed on December 31, 1953. The company's fiscal period is the calendar year. (a) Give all of the entries relating to the bond issue that would be made on the books of the company in 1954. (b) What information relating to the bond issue would appear on the financial statements prepared at the end of 1954?

7. The Case Corporation issues \$1,000,000 of serial bonds on January 1, 1953, bonds of \$200,000 to be retired at the end of each year. Interest of 4% is to be paid annually. The issue is sold for \$1,013,856, a price that will result in a  $3\frac{1}{2}\%$  yield. (a) Assuming premium amortization by the compound-interest method, prepare a table summarizing interest charges and bond carrying values for the 5-year period similar to that illustrated on page 560. (b) Prepare a similar table assuming premium amortization by the straight-line method.

8. On January 1, Palmer and Boyd, Inc. issues \$1,000,000 of 5% notes. Notes amounting to \$200,000 are to be redeemed annually, the first redemption to be made at the end of the sixth year. The notes are sold at 96. Interest is payable annually. Set up a table showing the amortization of the discount. What entries would be made to record the interest payments (a) at the end of the first year, (b) at the end of the sixth year, (c) at the end of the seventh year?

9. On January 1, 1947, Jackson, Inc. sells \$100,000 of 6% debenture serial bonds at 90. Bonds of \$20,000 are redeemable at annual intervals, the first redemption to be made on January 1, 1953. Interest checks are mailed semiannually on June 30 and December 31. Amortization entries are made at end of each year. Bonds are callable prior to their serial maturity dates at 102.

All outstanding bonds are called in and retired on December 31, 1953. Give the entries to record the interest payment and the bond retirement at the end of 1953.

10. Wright, Inc. issues \$100,000 of serial bonds on January 1, 1953, bonds of \$10,000 being redeemable annually beginning on January 1, 1954. Bonds are sold for \$97,250. Interest at 4% is payable semiannually on January 1 and July 1. On May 1, 1955, the bond series due on January 1, 1958, is retired at 99 plus accrued interest. What entry is made to record the bond retirement?

11. Alvin Gray is a holder of \$10,000 of 10-year convertible bonds of the Clark Corporation that were issued by the company at 101. He has the option of converting each \$1,000 bond into 10 shares of common stock, par value \$100. The bond rate is 3% payable semiannually. The option is exercised by Gray  $2\frac{1}{2}$  years after the issuance of the bonds. (a) What entries are required on Gray's books and on the books of the corporation to record the exchange in the absence of a market value for the stock? (b) If the stock had a market value of \$120 per share at the time of ex-

change, what entries would be made on the books of each party if this value is to be recognized?

12. On December 31, 1953, the end of a fiscal year, the ledger for A. P. Jones, Inc. shows the following:

10-Year 4½% Bonds Payable			
July 1, 1952	. 105,000	Jan. 1, 1951	..... 500,000
Discount on Bonds Payable			
Jan. 1, 1951	. 10,000		

Interest on bonds is payable semiannually on January 1 and July 1. Discount amortization has never been recorded. Retirement of bonds of \$100,000 on July 1, 1952, at a call premium of 5% was recorded by charging the bonds account for the retirement cost. Give whatever correcting entries are necessary on December 31, 1953, as well as the adjustment for accrued interest on this date.

13. The Jacobs Corporation maintains a bond sinking fund. The following balances relative to the sinking fund appear in the general ledger at the beginning of 1954:

Bond Sinking Fund:	
Sinking Fund Cash	\$140,000
Bonds of Jacobs Corporation (at par)	630,000
Other Securities	110,000
Accrued Interest on Other Securities	1,600

During 1954, the following transactions take place:

- Other securities, cost \$26,000, are sold for \$27,500.
- Jacobs Corporation bonds, par \$120,000, are acquired at a cost of \$122,500 plus accrued interest of \$2,200. (Bonds were originally issued at par.)
- Cash of \$60,000 is transferred to the sinking fund.
- Collections of income on other securities total \$3,500.
- Bonds in the sinking fund are formally retired.

Give the entries to record the foregoing transactions.

14. The Williams Company calls in a \$200,000 4% bond issue that is not due for 4 years and on which there is unamortized bond discount of \$3,200. The call price is 102. The company then issues 10-year 3% bonds of \$250,000, which are sold at 99. List the methods available for the disposition of unamortized discount and call premium and give the entries for refunding that would be made in each case.

## PROBLEMS

**19-1.** The Clark Corporation issued \$100,000 4% bonds, interest payable semiannually, bonds maturing 4 years after issue. The bonds were sold at \$96,415, a price to yield 5% on the issue.

*Instructions:* (1) Prepare tables to show the periodic adjustments to the discount account and the annual bond interest assuming adjustment by each of the following methods: (a) the straight-line method and (b) the compound-interest method.

(2) Give entries for the interest payment and the discount amortization for the first year of the bond issue assuming use of (a) the straight-line method and (b) the compound-interest method.

**19-2.** Brock and Gay, Inc. was authorized to issue 10-year, 4% bonds of \$500,000. The bonds are dated January 1, 1952, and interest is payable semiannually on January 1 and July 1. Checks for interest are mailed on June 30 and December 31. Bond sales were as follows:

April 1, 1952	\$300,000 at 98½ plus accrued interest.
July 1, 1953	\$100,000 at 102.

On September 1, 1953, remaining unissued bonds were pledged as collateral on the issue of \$75,000 of short-term notes.

*Instructions:* (1) Give the journal entries relating to bonds that would appear on the corporation's books in 1952 and 1953. (Straight-line amortization is used; an unissued bonds account is set up.)

(2) Show how information relative to the bond issue will be reflected on the balance sheet prepared on December 31, 1953. (Give balance sheet section headings and accounts and account balances appearing within such sections.)

**19-3.** The Logan Corporation received permission as of January 1, 1953, to issue 5% bonds of \$3,000,000 maturing on January 1, 1963. The bonds are dated January 1, 1953, and interest is payable semiannually on January 1 and July 1. The bonds are callable at 102 plus accrued interest at any time after January 1, 1958.

On March 1, 1953, the corporation sold bonds of \$1,500,000 at 103 plus accrued interest. Checks for interest were placed in the mail on June 30, 1953. The balance of the authorized issue was sold for cash on October 1, 1953, at 99½ plus accrued interest.

The corporation's annual fiscal period ends on November 30. Interest on bonds was accrued to this date, and bond amortization entries for the past fiscal year were recorded.

Interest checks were mailed on December 31, 1953.

*Instructions:* (1) Give the journal entries relating to the bonds that appear on the books for the year 1953. (The straight-line method is used for amortization; an account for bonds unissued is not set up.)

(2) Assuming that the bonds are called in on July 1, 1958, give the journal entries to record the payment of interest and the bond retirement on this date,

**19-4.** The Miller Co. was authorized to issue \$2,000,000 of 6% debentures on April 1, 1947. Interest on the bonds is payable semiannually on April 1 and October 1. Bonds mature on April 1, 1957, but may be called at 101½ on any interest date after 5 years from date of issue.

The entire issue was sold on April 1, 1947, at 96½ less costs of \$30,000 involved on the issue. Cash deposits were made periodically to a sinking fund for the purpose of retiring bonds. Bonds were purchased on the open market from the sinking fund and were retired as follows:

June 1, 1949	\$200,000 at 98 plus accrued interest.
November 1, 1950	\$300,000 at 99¼ plus accrued interest.

On April 1, 1952, bonds of \$500,000 were called in, and the remaining bonds were retired at maturity.

*Instructions:* (1) Give the journal entries, including any adjustments relating to the issuance of bonds and interest on the obligation, that are required for 1947. (The company's fiscal period is the calendar year.)

(2) Prepare a table with columnar headings as shown below. Show for each calendar year over the life of the bond issue the information as listed.

Year	Bond Interest			Bond Retirement				Balance Sheet Balances	
	Expense before Amortization	Discount Amortization	Total Interest Expense	Amount Paid	Reduction in Discount	Reduction in Bonds Payable Account	Loss on Bond Retirement	Balance of Discount Account	Balance of Bonds Payable Account

**19-5.** The Daniels Company issued 5% bonds of \$2,000,000 at 104 plus interest on April 1, 1953. The bond issue is dated January 1, 1953; interest is payable semiannually on January 1 and July 1. On January 1 of each year for 10 years, beginning January 1, 1954, bonds of \$200,000 mature and are paid. The company's fiscal period is the calendar year.

*Instructions:* Give the required journal entries relating to the bond issue in 1953 and 1954. Assume that a bonds unissued account is not set up and that checks are issued on December 31 for all payments due January 1.

**19-6.** Hansen, Inc. issued 4% serial bonds of \$1,000,000 dated January 1, 1953. The interest is payable semiannually on January 1 and July 1. The bonds provide that four annual redemptions of \$100,000 are to be made, the first one on January 1, 1955; three annual redemptions of \$200,000 are to be made beginning on January 1, 1959.

*Instructions:* (1) Prepare a table showing the amount of bond discount to be amortized each year by the bonds-outstanding method, assuming bonds are issued on January 1, 1953, at 94. (The company's fiscal period is the calendar year.)

(2) Prepare a table showing the bond discount amortization if the bonds are issued on April 1, 1953, at 94 plus accrued interest.

(3) Assuming the bonds are issued on April 1, 1953, give the journal entries that would be made in 1953 for (a) the issuance of the bonds, (b) the semiannual interest payments, and (c) the amortization of discount.

**19-7.** The Weston Company sold \$1,000,000 of 4% debenture bonds on January 1, 1952, to an investment banking firm at 97½. The bonds have serial maturities; bonds of \$200,000 are payable at annual intervals beginning on January 1, 1955. Interest is payable annually on January 1. Checks for principal and interest payments are mailed on December 31 of each year. On July 1, 1954, the company reacquired at 99 plus accrued interest bonds of \$100,000 due January 1, 1955, and bonds of \$100,000 due January 1, 1956. Bonds were formally retired.

*Instructions:* (1) Assuming discount amortization by the bonds-outstanding method and bond retirements as scheduled, prepare a table summarizing interest charges and bond carrying values for the bond life similar to that illustrated on page 559, supported by a schedule showing the calculation of amortization amounts.

(2) Prepare a similar table summarizing interest charges and bond carrying values for the bond life taking into consideration bond redemptions in advance of maturity dates as indicated.

(3) Record in journal form the retirement of bonds on July 1, 1954.

**19-8.** The Barnes Corporation plans to issue 5%, 10-year bonds that are convertible into common stock within 5 years at the option of the bondholders. Each \$1,000 bond may be exchanged for 15 shares of stock, par value \$50, plus any accrued interest. Interest on bonds is payable on March 1 and September 1. Accrued interest is to be paid when the bonds are converted. The corporation's fiscal period is the calendar year.

Bonds of \$1,500,000 are authorized and printed, and are dated March 1, 1952. Bonds unissued are recorded in the accounts. The issue does not take place until May 1, 1952, when bonds are disposed of at 102 plus accrued interest.

On August 1, 1953, holders of bonds of \$400,000 elected to convert their holdings into stock; remaining bonds were converted into stock on September 1, 1954.

*Instructions:* Give the necessary journal entries relating to the bond issue during the period 1952 to 1954, including any adjusting and reversing entries that may be required. Assume straight-line amortization.

**19-9.** The balance sheet for the Anderson Corp. on December 31, 1953, the close of the fiscal period, shows the following accounts:

Bond Discount and Expense	\$18,000	Accrued Interest on Bonds	\$15,000
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Bonds Payable, due January 1, 1958, interest at 4% payable semiannually on Jan. 1 and July 1	750,000
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On January 1, 1954, the following took place: cash of \$975,000 was made available from the sale of \$1,000,000 of 10-year, 3½% bonds to

West Underwriters. Cash from the new issue was used for retirement of the 4% bonds at a call price of 102 and for payment of accrued interest on this issue; the balance of cash was added to the general funds of the company. Interest on the new issue is payable January 1 and July 1.

*Instructions:* (1) Give the entries that would appear on the books of the corporation relative to bonds and bond interest for the year 1954, assuming that unamortized discount and call premium on the old issue are not to be identified with future fiscal periods.

(2) Give the entries that would appear on the books of the corporation relative to bonds and bond interest for the year 1954, assuming that unamortized discount and call premium on the old issue are to be amortized over the remaining life of the old issue.

10. In inspecting the records of the Plywood Corporation you find that 4½% First Mortgage Serial Bonds were authorized and dated July 1, 1950, with interest payable semiannually. The issue was sold on October 1, 1950, at 99 plus accrued interest of \$2,250 and less costs on the issue of \$3,250. Bonds of \$20,000 mature at annual intervals; the first maturity date is July 1, 1951. Bonds are callable on any interest payment date. On January 1, 1953, the company called in the 1955 maturities at 102. The company maintained a single account for the bond issue, and on December 31, 1953, the close of an annual fiscal period, this account showed a balance of \$116,600 and appeared as follows:

4½% First Mortgage Serial Bonds

July 1, 1951	Retirement of 1951 maturities	20,000	Oct. 1, 1950	Proceeds from sale of bonds	197,000
July 1, 1952	Retirement of 1952 maturities	20,000			
Jan. 1, 1953	Retirement of 1955 maturities	20,400			
July 1, 1953	Retirement of 1953 maturities	20,000			

*Instructions:* (1) Give the correcting journal entries as well as any adjusting entries required as of December 31, 1953. (Assume that the books for 1953 have not been closed. Give any schedules that may be required in developing entry totals.)

(2) What account balances and amounts relating to the bond issue would appear on the balance sheet as of December 31, 1953, and on the income statement for the year ending December 31, 1953?

19-11. The board of directors of the Bellview Company authorized a \$1,000,000 issue of 5% convertible 20-year bonds dated March 1, 1951. Interest is payable on March 1 and September 1 of each year. The conversion agreement provides that until March 1, 1956, each \$1,000 of bonds may be converted into 6 shares of \$100 par-value common stock and that interest accrued to date of conversion will be paid in cash. After March 1, 1956, the bonds are convertible into 5 shares of common for each \$1,000 of bonds.

The company sold the entire bond issue on June 30, 1951, at 98 and accrued interest. Deferable costs incurred in making the sale amounted to \$8,320. The company adjusts its books at the end of each month and closes them on December 31 of each year. Interest is paid as due. On February 1, 1953, a holder of \$20,000 of bonds converts them into common stock.

*Instructions:* Prepare entries in journal form to reflect the transactions arising out of the existence of these bonds on each of the following dates:

- (a) June 30, 1951.
- (b) September 1, 1951.
- (c) December 31, 1952 (including closing entries).
- (d) February 1, 1953.
- (e) December 31, 1953 (including closing entries).

In support of the above entries, prepare a summary analysis of the unamortized bond discount and expense account for the period to December 31, 1953. (A.I.A. adapted)

**19-12.** The Arden Company issued \$3,000,000 of 4% first-mortgage bonds on October 1, 1945, at 96 and accrued interest. The bonds were dated July 1, 1945; interest payable semiannually on January 1 and July 1; redeemable after June 30, 1950, and to June 30, 1952, at 104, and thereafter until maturity at 102; and convertible into \$100 par value common stock as follows:

Until June 30, 1950, at the rate of 6 shares for each \$1,000 of bonds.

From July 1, 1950, to June 30, 1953, at the rate of 5 shares for each \$1,000 of bonds.

After June 30, 1953, at the rate of 4 shares for each \$1,000 of bonds.

Expenses of issue were \$6,360 and are to be combined with the premium or discount, and the total is to be amortized over the life of the bonds from date of issue. The bonds mature in 10 years from their date. The company adjusts its books monthly and closes as of December 31 each year.

The following transactions occur in connection with the bonds:

- (a) July 1, 1951—\$500,000 of bonds were converted into stock
- (b) December 31, 1952—\$500,000 face amount of bonds were reacquired by purchase on the market at  $99\frac{1}{4}$  and accrued interest. These were immediately retired.
- (c) July 1, 1953—The remaining bonds were called for redemption. For purpose of obtaining funds for redemption and business expansion, a \$4,000,000 issue of  $2\frac{3}{4}\%$  bonds was sold at  $98\frac{1}{4}$ . These bonds were dated July 1, 1953 and were due in 20 years.

*Instructions:* Prepare in journal form the entries necessary for the company in connection with the above transactions, including monthly adjustments where appropriate, as of the following dates:

- (1) October 1, 1945.
- (2) December 31, 1945.
- (3) July 1, 1951.
- (4) December 31, 1952.
- (5) July 1, 1953.

(A.I.A. adapted)

**19-13.** The post-closing trial balance prepared by the accounting department of the Fenwick Company from its records at September 30, 1953, is given at the top of the following page.

It has been determined that the following transactions or circumstances have not been adequately considered by the company's accountants in the preparation of the trial balance:

- (1) Discounts receivable represent the uncollected balances of a considerable number of notes receivable, acquired on a discount basis, in the aggregate original amount of \$3,750,000. The discount rate was 10% and the deferred income of \$375,000 is the full amount of the discount at the dates of acquisition, which were as follows:

DATE	AGGREGATE AMOUNT
June 15, 1953. ....	\$2,000,000
July 21, 1953. ....	1,000,000
September 10, 1953. ....	750,000

By their terms, the notes are collectible in equal monthly installments over a period of 15 months. The management is of the opinion that the aggregate discount on the notes acquired should be regarded as earned over the life of the notes and has requested that the "sum of months' digits" method\* of transferring discount to income be used. It has been agreed that this method is acceptable, but it has further been agreed that no discount will be transferred to income in the month of acquisition.

- (2) The company executed a lease agreement in July, 1953, for a 5-year period beginning September 1, 1953, which stipulated an annual rental of \$10,000. Under the provisions of the lease, the annual rental is due on the first day of each lease year, but no rent had been paid or accrued at September 30, 1953.
- (3) Real estate taxes are payable in two equal installments on March 1 and September 1 of each year. The fiscal year of the assessing body ends on December 31, but taxes are actually assessed on January 15 and become a lien against the property on February 1 of the fiscal year to which they are applicable.

The 1953 taxes (due March 1 and September 1, 1953) were billed at \$60,000, and were paid when due.

- (4) A 2% dividend was declared on September 30, 1953, to holders of record on October 15, 1953. The dividend is payable on November 1, 1953.

\*For example, if notes were collectible in equal installments over a 5-month period the following procedure would be used:

Month	Sum of Months' Digits	Proportion of Deferred Income to be Considered Realized
1st. ....	1	5/15
2nd. ....	2	4/15
3rd. ....	3	3/15
4th. ....	4	2/15
5th. ....	5	1/15
	<u>15</u>	<u>15/15</u>

ACCOUNTS	DEBIT	CREDIT
Accounts payable and other current liabilities...		\$ 1,830,000
Accounts receivable .....	\$ 3,800,000	
Bonds payable—4%—1957 .....		2,000,000
Capital stock (at par) .....		4,000,000
Cash .....	1,983,333	
Deferred income (discounts receivable) .....		375,000
Discounts receivable .....	3,216,667	
Fixed assets .....	4,000,000	
Goodwill .....	80,000	
Notes payable .....		1,000,000
Reserve for depreciation .....		1,000,000
Reserve for losses (receivables) .....		625,000
Surplus:		
Balance—October 1, 1952 .....		1,915,000
Income for the year ended September 30, 1953 .....		435,000
Treasury stock (at par) .....	100,000	
	<u>\$13,180,000</u>	<u>\$13,180,000</u>

- (5) Under a contract with an advertising agency, payments of \$110,000 were made during the year in connection with a direct-mail campaign. The payments represented a deposit (\$25,000) and services and expenses through August 31 (\$85,000). A bill for services and expenses for the month of September has been received in the amount of \$60,000. All payments have been charged to expense; no accruals are reflected in the records.

The contract was entered into and the program was commenced on June 1, 1953. The campaign is to continue until May 31, 1954, but benefits are expected to accrue over a 3-year period. The deposit is intended to serve as a working fund for the payment of day-to-day expenses by the advertising agency; it will be deducted from the agency's final billing.

Total expenditures under this contract are estimated at \$400,000. The company engages in more or less similar campaigns almost continuously.

- (6) Cash for the payment of the semiannual bond interest, due October 15, 1953, was deposited in advance with the trustee in September. The transfer of cash was treated as a charge against income.
- (7) Notes payable are all due prior to September 30, 1954.

*Instructions:* (1) Prepare a columnar work sheet setting forth the necessary adjustments to the company's accounts.

(2) Prepare a corrected balance sheet as of September 30, 1953.

(A.I.A. adapted)

### Capital Stock

#### Capital Upon Corporate Formation

##### FORMING THE CORPORATION

The corporation is an artificial entity created by law that has an existence separate from its owners and that may engage in business within prescribed limits just as a natural person. The modern corporation makes it possible for large amounts of property to be assembled under one management. This property is transferred to the corporation by the individual owners because they believe the corporation will make effective use of it. In exchange for this property, the corporation issues an ownership interest to each party making a contribution. Managements, elected by the contributors of the property, supervise the use, operation, and disposition of the property.

Business corporations may be created under the corporation laws of any one of the forty-eight states or of the federal government. Since the states do not follow a uniform incorporating act, many variations are encountered in the conditions under which a corporation may be created and under which it may operate.

In most states at least three individuals must join in applying for a corporate charter. Application is made by submitting to the secretary of state or other appropriate official *articles of incorporation*, which offer detailed information concerning the proposed organization. If such articles conform to the state's laws governing corporate formation, the articles are accepted and a corporate *charter* is issued recognizing the existence of a new corporate entity. Subscriptions to capital stock now become effective. A stockholders' meeting is called at which corporation *by-laws* are adopted and a *board of directors* is elected. Corporate officers are named. Corporate activities may now proceed in conformance with state corporation law and charter authorization. A complete record of the proceedings of both stockholders' and directors' meetings must be maintained in a *minute book*.

Corporations are classified as *public* when they represent governmental subdivisions or government-owned units and as *private* when they are privately owned. The private group includes *nonstock* companies where operations are of a nonprofit character and stock is not issued, as in the case of hospitals and schools, and *stock* companies where operations are for profit and stock is issued as evidence of an ownership

interest. Corporations are also classified as *domestic* and *foreign*; a corporation is termed domestic in the state of its incorporation and foreign in all other states. A corporation whose stock is widely held and is available for purchase is known as an *open corporation*; a corporation whose stock is held by a few and is not available for purchase is called a *close corporation*.

#### **NATURE OF CAPITAL STOCK**

An ownership interest in corporate assets is evidenced by shares of stock in the form of certificates. When a value is stated for each share of stock, the stock is said to have a *par value*; stock issued without such an assigned value is called *no-par* stock.

When a single class of stock is issued, each stockholder has certain basic rights that are exercised pro rata according to the number of shares represented by his holdings. These include: (1) the right to share in dividends declared by the board of directors out of corporate earnings; (2) the right to vote in the election of directors and in the determination of certain corporate policies; (3) the right to maintain one's fractional interest in the corporation through purchase of additional capital stock issued by the corporation, known as the *pre-emptive* right; and (4) the right to participate in cash or other property distributions resulting from liquidation.

In assembling property for a corporation, it is frequently found advantageous to make use of more than one kind of stock with varying rights or priorities relating to the different classes. Stock that has certain preferences over the basic issue is known as *preferred stock*; the basic or underlying issue is known as *common stock*. When more than one class of stock is issued, the special rights and limitations relating to each class of stock are stated in the articles of incorporation or in the corporation by-laws and become a part of the stock contract between corporation and stockholder. One must be familiar with the over-all capital structure to obtain a full understanding of any single class of stock, including the special rights granted to it as well as any restrictions imposed upon it. Frequently the stock certificate defines the rights and the restrictions relative to the interest it represents, together with those pertaining to other capital interests outstanding.

#### **LEGAL OR STATED CAPITAL**

The owner of stock in a corporation cannot be held personally liable by creditors of the corporation for any claims against the company. Protection is afforded to the creditors, however, through the designation of a portion or all of the stockholders' investment as *legal* or *stated capital*. State incorporation laws provide that such capital cannot be returned to owners

in the form of dividends. Modern corporate legislation normally goes beyond such limitations and adds that such capital cannot be impaired by the reacquisition of capital stock; reductions in legal or stated capital are possible only as a result of corporate losses or of special action as provided for by law. With a portion of the corporate capital restricted as to distribution or withdrawal, creditors can rely on the absorption by the ownership group of losses equal to such restricted capital before their own equity is subject to any shrinkage.

When stock has a par value, the legal or stated capital is normally the total par value of all stock issued and subscribed. When stock is no-par, certain states require that the total consideration received on the sale of stock be regarded as legal capital. A number of states, however, permit the corporate directors to assign an arbitrary value to each share regardless of its issuing price, although in some instances the amount assigned to each share cannot be less than a certain minimum required by law. The minimum value required by law or the value fixed by the board of directors is known as the stock's *stated value*.<sup>1</sup> No-par stock whose full proceeds must be regarded as legal capital is frequently referred to as *true no-par stock* to distinguish such issues from no-par with an arbitrary stated value.

The portion of the stockholders' investment representing legal or stated capital and thus the "margin of safety" to the creditor group is normally reported as *capital stock*; any amount contributed by the stockholder in excess of that portion designated as legal capital is reported as a part of the company's paid-in surplus. The sale of stock gives rise to legal or stated capital; a stock dividend or other appropriate action on the part of the board of directors providing for the conversion of corporate surplus to capital stock augments this capital.

<sup>1</sup>Section 1900 of the California Corporation Code (1949) provides, for example, as follows:

"Every stock corporation shall have a stated capital which shall be made up of the sum of the following amounts . . .

- (a) The aggregate par value of par value shares . . . except that if par value shares have been issued as fully paid up for a consideration of less than par pursuant to Section 1110, only the amount of the agreed consideration for such shares, specified in dollars shall be credited to stated capital.
- (b) The aggregate amount specified in dollars of the agreed consideration received or to be received by the corporation for all shares without par value . . . except any portion of the consideration for such shares without liquidation preference which has been expressly designated by the board of directors upon or prior to issue as paid-in surplus. In the absence of such designation by the board of directors, the entire amount of the consideration for shares without par value shall be credited to stated capital.
- (c) Such amounts as are transferred from surplus to stated capital upon declaration of a share dividend or by resolution of the board of directors."

Note in (a) that in certain instances a discount on stock with a par value is deductible from par in arriving at stated capital under the California law.

**PAR AND  
NO-PAR STOCK**

When a corporation is authorized to issue stock with a par value that is to form the corporate legal capital, state incorporation laws may permit the issue of such stock only for an amount equal to or in excess of its par. Sale of the stock for an amount in excess of the par then gives rise to a premium that is considered paid-in surplus; the premium is added to capital stock shown at par value in reporting the invested capital. In certain states corporations may be permitted to issue stock at an amount less than par, that is, at a discount. Capital stock is still reported at par, but the discount is reported as a subtraction item in presenting the stockholders' invested capital. Persons subscribing for stock at a discount fulfill their obligation to the corporation upon payment of the agreed price; however, such subscribers may be held liable by creditors of the corporation for the amount of the discount in the event of inability of the corporation to meet its obligations. Creditors are thus protected by the full legal capital as reflected by the capital stock balance at par.

Prior to 1912 corporations were permitted to issue only stock with a par value. In 1912, however, New York state changed its corporation laws to permit the issuance of stock without a par value, and since that date all other states have followed with similar statutory provisions. Today many of the common stocks listed on the New York Stock Exchange have no-par value.

Use of no-par issues was originally encouraged on the grounds that: (1) such stock could be sold as "fully paid" without making the subscriber contingently liable to creditors as in the case of par stock issued at a discount; (2) investors would not be misled by a less-than-par "bargain" price, but would investigate the value of a stock in the absence of a value appearing on stock certificates; and (3) assets would be recorded at their actual value rather than at amounts set by the par of the stock as a means of enabling stockholders to avoid the contingent liability for the discount.

It is questionable whether investors have subjected no-par stock to closer investigation upon its purchase and whether more satisfactory valuations have been applied to properties received in exchange for no-par stock as compared with stock having a par value. Along with these failures, certain undesirable practices have arisen in the treatment of surplus arising from the sale of no-par stock in excess of its stated value: (1) this excess has been reported simply as "surplus" on the balance sheet, suggesting to the reader of the statement accumulated earnings rather than paid-in capital; (2) the surplus has been

used to absorb operating losses, the balance sheet thus failing to disclose a deficit from operations; and (3) the surplus has been used as a basis for dividends without disclosure to stockholders that such dividends are no more than a return of the original investment. A disadvantage in the issue of no-par stock has been the taxes that are normally imposed on stock of this class; transfer fees, stock taxes, and other taxes and fees on no-par stock are frequently based on arbitrary values assigned to the shares that may be grossly in excess of the sales price per share.

### **PREFERRED STOCK**

When a corporation issues both preferred and common stock, the preference attaching to preferred over the basic or common issue normally consists of a prior claim on earnings distributed as dividends. A dividend preference does not assure the payment of dividends on the preferred issue; it simply means that dividend requirements must be met on preferred stock before anything can be paid on common stock. Dividends do not accrue; payment of a dividend on preferred stock, as on common stock, requires the legal ability on the part of the company to make such a distribution, as well as appropriate action by the board of directors.

While a company can make no guarantee for dividends on its own stock, it can undertake to guarantee dividend payments on stock of another company; hence, one may find a company guaranteeing payment of dividends of another company in consideration for services or properties made available by the latter party to the guarantor.

Preferred stock is ordinarily issued with a par value. When preferred stock has a par value, the dividend preference is stated in terms of a percentage of par value. When preferred stock is no-par, the dividend is stated in terms of dollars and cents. Thus holders of 5%, \$50 par, preferred stock are entitled to an annual dividend of \$2.50 per share before any distribution is made to common stockholders; holders of \$5 no-par preferred stock receive \$5 per share annually before common distributions.

A corporation may issue more than one kind of preferred stock. Sometimes preferred issues are designated first preferred, second preferred, etc., with the first preferred issue having a first claim on earnings, the second preferred having a second claim, and so on. The common stock would rank after the satisfaction of all prior preferred claims. In other instances the claim to earnings on the part of several preferred issues may have equal priority, but the dividend or asset preferences may vary.

Other characteristics and conditions are frequently added to preferred stock in the extension of certain advantages or in the limitation of certain rights. Such factors may be expressed in adjectives modifying preferred stock, as cumulative preferred stock, participating preferred stock, convertible preferred stock, and redeemable preferred stock. More than one of these characteristics may be applicable to a specific issue of preferred stock. For example, a preferred issue may be described as “\$4.50 First Convertible, Cumulative and Participating Preferred.”

*Cumulative and Noncumulative Preferred Stock.* Cumulative preferred stock provides that, whenever the corporation fails to declare (*passes*) a dividend on this class, such dividends accumulate and require payment in the future before any dividend distributions can be made to common stockholders. For example, assume that a corporation has outstanding 10,000 shares of 4% cumulative preferred stock, par \$25, on which the company has passed dividends for the two preceding years. It will be necessary to declare dividends on preferred stock of \$20,000 for the two preceding years, together with \$10,000 for the current year, or a total of \$30,000, before any dividends can be declared on common stock.

If the preferred stock is *noncumulative*, it is not necessary to provide for back dividends. Failure to declare a dividend on preferred stock in any one year means that it is irretrievably lost; a dividend may be declared on common stock as long as the preferred stock receives the preferred rate for the current period. Preferred stock contracts normally provide for cumulative dividends. Courts have generally held that dividend rights on preferred stock are cumulative in the absence of specific conditions in the contract to the contrary.

*Participating and Nonparticipating Preferred Stock.* Preferred stock may be *participating*, which means that it shares in dividend declarations with common stock in accordance with certain participation features. If preferred stock is *fully participating*, it receives as high a dividend rate as common stock. If preferred stock is participating up to a certain maximum rate, it shares with common stock only up to this maximum. Since it is preferred stock, it still receives its regular dividend before amounts are available for common stock or for distribution on a participating basis. To illustrate, assume that a corporation has outstanding 5% fully participating preferred stock, par \$100,000, and common stock, par \$200,000. If earnings warrant the payment of \$36,000 in dividends, both preferred stock and common stock receive 12%. The amount to be paid as dividends is apportioned as follows:

	PREFERRED	COMMON
(1) To preferred, 5%.....	\$ 5,000	
(2) To common, up to preferred rate, 5%.....		\$10,000
(3) To all shares ratably, 7% (\$21,000 on stock outstanding of \$300,000)	7,000	14,000
	<u>\$12,000 (12%)</u>	<u>\$24,000 (12%)</u>

If the preferred stock were limited in participation to a maximum of 8%, it would then receive \$8,000, and common stock would receive the balance of \$28,000, or 14%. Participation features of preferred stock may be stated in terms of dollar amounts instead of in terms of percentage rates as above. When preferred stock is no-par, participation would have to be provided in terms of dollar amounts. A variety of methods for participation are found on preferred issues.

When preferred stock is *nonparticipating*, dividends are limited to the preferred rate or amount. Common stockholders may be paid any amount after payment of the preferred dividend for the current year. Preferred issues normally do not include participating features. Courts have generally held that preferred stock is nonparticipating when the stock contract does not specifically provide for participation.

*Convertible Preferred Stock.* Preferred stock is *convertible* when it offers the stockholder the right to exchange such holdings for some other security of the corporation. Conversion rights generally provide for the exchange of preferred stock into common stock. Since preferred stock normally has a prior but limited claim on earnings, large earnings resulting from successful operations accrue to the common stockholders. The privilege of conversion gives the preferred stockholder the opportunity to share with the common stockholders in the successful operations of the corporation. Preferred stock may be convertible into bonds. Under such conditions, the investor has the option of changing his position as an owner to that of a creditor if such a change should appear advantageous.

*Redeemable Preferred Stock.* Preferred stock is *redeemable* when the corporation retains the option of redeeming it. Ordinarily such a redemption requires payment by the corporation of an amount in excess of the par value or original issuance price. Payment of any dividends in arrears is also required when stock is called in for redemption.

*Asset and Dividend Preferences upon Liquidation.* Stock that is preferred as to dividends is generally preferred as to assets; however, such a preference cannot be assumed but must be specifically stated in

the preferred stock contract. The preference as to assets may consist of an amount equal to par, to par plus a premium, or to a stated amount in the absence of a par value. Terms of the preferred contract may also provide for the full payment of any dividends in arrears upon liquidation, regardless of the earned surplus balance reported by the company. When this is the case and there is a deficit or insufficient accumulated earnings, such dividend priorities must be met from the invested capital of common stockholders; common stockholders receive whatever assets remain after settlement with the preferred group.

**COMMON STOCK**

Strictly speaking, there should be but one kind of common stock. Common stock is the last-claim stock and it carries the greatest risk. In return for the risk that it carries, it ordinarily shares in profits to the greatest extent if the corporation is successful. Legally there is no distinction in management rights between preferred and common stocks. Actually, however, the conditions of issue ordinarily give management rights exclusively to common stockholders as long as dividends are paid regularly on preferred stock; upon failure to meet preferred dividend requirements, the preferred contract may provide that special voting rights shall be granted to preferred stockholders to afford this group a more prominent role in the management of the company.

Because of certain legal restrictions on preferred stock, a few corporations have issued two types of common stock, known as Class A stock and Class B stock. One of the two types will have special preferences or rights that the other type does not have, such as dividend preferences or voting rights. The distinction between Class A and Class B stock, then, is similar to that normally found between a company's preferred and common issues. The use of such classified common stocks has been so greatly abused that stock exchanges have refused to list such new issues, and this form of corporate financing has been largely discontinued.

**RECORDING ISSUANCE  
OF CAPITAL STOCK**

The capital stock of a corporation may be authorized but unissued; it may be subscribed for and held for issuance pending receipt of cash for subscriptions; it may be outstanding in the hands of stockholders; it may be reacquired and held by the corporation for subsequent sale or use; and it may be canceled with the permission of the proper state authority. An accurate record of the position of the corporation as a result of the exchanges of property between stockholders and the corporation must be maintained in the accounts. Each class of stock requires separate accounting.

*Recording the Stock Authorization.* The *authorized capital stock* of a corporation is the maximum number of shares that can be issued under the conditions set by the charter. Application to the appropriate state authority is required in obtaining any change in the original authorization. The amount of stock authorized may be recorded by a memorandum entry in the journal and then reported in memorandum form in the capital stock account.

*Recording the Stock Subscription.* The agreement to purchase stock is known as a *subscription*. This is a legally binding contract on the subscriber and the corporation. By express provisions, however, the contract may be binding only if subscriptions for a stated amount are received. A subscription, while giving the corporation a legal claim for the contract price, also gives the subscriber the status of a stockholder unless certain rights as a stockholder are specifically withheld by law or by terms of the contract. Ordinarily stock certificates are not delivered until the full subscription price has been received.

Upon receiving subscriptions to stock, Capital Stock Subscriptions Receivable is debited for the subscription price, Capital Stock Subscribed is credited for the value to be assigned to the stock, and a paid-in surplus account is credited for the amount of the subscription price in excess of the stock par or stated value.<sup>1</sup> Subscriptions for par-value stock and for no-par stock with a stated value are recorded in a similar manner. When no-par stock is without a stated value, Capital Stock Subscribed is credited for the full amount of the subscription. If the laws of the state of incorporation permit stock with a par value to be sold at a discount and subscriptions are received on such a basis, Capital Stock Subscriptions Receivable is debited for the subscription price, Discount on Capital Stock is debited for the discount, and Capital Stock Subscribed is credited for the stock par value.

Capital Stock Subscriptions Receivable is a controlling account, individual subscriptions being reported in the subsidiary *subscribers ledger*. It is regarded as a current asset only when it is the intent of the corporation to make collections on this balance currently. This is normally the case. When subscription amounts are due or are called for at different intervals, separate receivable or "call" balances may be established for amounts due on each collection date. Balances currently receivable would be recognized as current assets; remaining balances would be regarded as noncurrent. When subscription account balances are to be paid only at some indeterminate future date when

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<sup>1</sup>The term "Capital Stock" is used in account titles when there is a single class of stock. When there is more than one class of stock, appropriate class designations are used in the account titles.



*Recording the Issue of Stock.* Stock is normally issued upon the receipt of full payment on subscriptions. The issuance of stock is recorded by a debit to Capital Stock Subscribed and a credit to Capital Stock.

The credit to Capital Stock is accompanied by an entry for the issue of stock in the *stockholders ledger*. This ledger is controlled by the capital stock account; here separate accounts are maintained with each stockholder showing the number of shares issued to such individual. The issue of stock by the corporation calls for a credit to a stockholder's account for the shares issued. A transfer of stock owner-

Assuming stock is no-par but has a stated value of \$10		Assuming stock is no-par and without a stated value	
Cash	10,000	Cash	10,000
Equipment	20,000	Equipment	20,000
Capital Stock	30,000	Capital Stock	30,000
Capital Stock Subscriptions Receivable	62,500	Capital Stock Subscriptions Receivable	62,500
Capital Stock Subscribed	50,000	Capital Stock Subscribed	62,500
Paid-in Surplus — From Sale of Stock in Excess of Stated Value	12,500		
Cash	31,250	Cash	31,250
Capital Stock Subscriptions Receivable	31,250	Capital Stock Subscriptions Receivable	31,250
Cash	15,625	Cash	15,625
Capital Stock Subscriptions Receivable	15,625	Capital Stock Subscriptions Receivable	15,625
Capital Stock Subscribed	25,000	Capital Stock Subscribed	31,250
Capital Stock	25,000	Capital Stock	31,250
ASSETS		ASSETS	
Cash	\$56,875	Cash	\$56,875
Equipment	20,000	Equipment	20,000
Capital stock subscriptions receivable	15,625	Capital stock subscriptions receivable	15,625
	<u>\$92,500</u>		<u>\$92,500</u>
CAPITAL		CAPITAL	
Capital stock (no-par, stated value \$10), issued and outstanding, 5,500 shares	\$55,000	Capital stock (no-par), issued and outstanding, 5,500 shares	\$61,250
Capital stock subscribed (2,500 shares)	25,000	Capital stock subscribed (2,500 shares)	31,250
Paid-in surplus — from sale of stock in excess of stated value	12,500		
	<u>\$92,500</u>		<u>\$92,500</u>

ship is recorded by a charge to the account of the person making the transfer and an addition to the account of the person acquiring the stock; since capital stock outstanding remains the same after transfer of individual holdings, general ledger accounts are not affected.

A *stock certificate book* also reports stock outstanding. As certificates are issued, information with respect to the number of shares issued is reported on the certificate stubs; with ownership transfers, the original certificate submitted by the seller is canceled and attached to the original stub and a new certificate is issued to the buyer. Frequently both stockholder and transfer records are maintained by a *transfer agent* appointed by the corporation.

**ISSUE OF CAPITAL STOCK ILLUSTRATED**

The examples presented on pages 592 and 593 show the entries that are made to record the sale of stock when: (1) stock has a par value, (2) stock is no-par but has a stated value, and (3) stock is no-par and without a stated value. It is assumed that the Globe Corporation is granted permission to issue 10,000 shares of capital stock. Entries, together with the resulting capital accounts after transactions have been recorded, are listed.

**SUBSCRIPTION DEFAULTS**

If a subscriber defaults on his subscription by failing to make a payment when it is due, the corporation may (1) return to the subscriber the amount paid. (2) return to the subscriber the amount paid less any loss or expense incurred upon the resale of the stock, (3) declare the full amount that the subscriber has paid as forfeited, or (4) issue to the subscriber shares equal to the number paid for in full. The practice that the company follows will depend upon the policy adopted by the corporation within such legal limitations as are set by the state of incorporation. To illustrate the entries under the different circumstances mentioned, assume the subscription of \$10 par capital stock at 12½ in the example on page 592. One subscriber for 100 shares defaults after making his 50% down payment. The defaulted shares are subsequently sold at 11.

(1) *Assuming that the corporation returns to the subscriber the amount paid in:*

Capital Stock Subscribed	1,000	
Premium on Capital Stock	250	
Capital Stock Subscriptions Receivable		625
Cash		625
Cash	1,100	
Capital Stock		1,000
Premium on Capital Stock		100

- (2) *Assuming that the corporation returns to the subscriber the amount paid less the loss on the resale:*

Capital Stock Subscribed	1,000	
Premium on Capital Stock	250	
Capital Stock Subscriptions Receivable		625
Payable to Subscriber (payment withheld pending stock resale)		625
Cash	1,100	
Payable to Subscriber	150	
Capital Stock		1,000
Premium on Capital Stock		250
Payable to Subscriber	475	
Cash		475

- (3) *Assuming that the corporation declares the full amount paid in to be forfeited:*

Capital Stock Subscribed	1,000	
Premium on Capital Stock	250	
Capital Stock Subscriptions Receivable		625
Paid-In Surplus - From Forfeited Subscriptions		625
Cash	1,100	
Capital Stock		1,000
Premium on Capital Stock		100

- (4) *Assuming that the corporation issues shares to the subscriber equal to the number paid for in full:*

Capital Stock Subscribed	1,000	
Premium on Capital Stock	125	
Capital Stock		500
Capital Stock Subscriptions Receivable		625
Cash	550	
Capital Stock		500
Premium on Capital Stock		50

Similar procedures are employed in accounting for defaults on no-par stock.

### RECORDING AUTHORIZED STOCK IN THE ACCOUNTS

If it is desired to maintain in the accounts a record of the stock authorized as well as unissued, an alternate method may be employed in recording stock transactions. Instead of recording stock authorized by a memorandum entry, a formal entry is made debiting Unissued Capital Stock and crediting Authorized Capital Stock for the amount of the stock authorized. Subscriptions and payments are recorded as in the previous examples. The issue of stock, however, calls for a debit to Capital Stock Subscribed and a credit to Unissued Capital Stock. The amount reported by the account Authorized Capital Stock less the amount of stock unissued as reported by the account Unissued Capital Stock gives the amount of stock issued at any time. The

alternate procedure as applied to the sale of \$10 par capital stock in the example on page 592 is illustrated below:

Transaction	Entry	
<b>NOVEMBER 1</b>		
Received authorization to issue 10,000 shares of capital stock, par \$10.	Unissued Capital Stock	100,000
	Authorized Capital Stock	100,000
<b>NOVEMBER 1</b>		
Received cash of \$10,000 and equipment valued at \$20,000 in exchange for 3,000 shares.	Cash	10,000
	Equipment	20,000
	Unissued Capital Stock	30,000
<b>NOVEMBER 1-30</b>		
Received subscriptions for 5,000 shares at 12½ with 50% down payment, balance payable in 60 days.	Capital Stock Subscriptions Receivable	62,500
	Capital Stock Subscribed	50,000
	Premium on Capital Stock	12,500
	Cash	31,250
	Capital Stock Subscriptions Receivable	31,250
<b>DECEMBER 1-31</b>		
Received balance due from half of subscribers and issued stock to the fully paid subscribers, 2,500 shares.	Cash	15,625
	Capital Stock Subscriptions Receivable	15,625
	Capital Stock Subscribed	25,000
	Unissued Capital Stock	25,000

The capital data are the same as those developed when the first method was used:

<b>Capital stock issued:</b>		
Authorized capital stock, \$10 par value	10,000 shares	\$100,000
Less unissued capital stock	4,500 shares	45,000
Issued	5,500 shares	\$55,000
Capital stock subscribed	2,500 shares	25,000
Premium on capital stock		12,500
		<b>\$92,500</b>

The foregoing method can be used only in the cases of par value stock and no-par value stock with a fixed stated value; in these instances the valuation to be applied to the entire issue is known at the time of stock authorization. Since the first method illustrated on pages 592 and 593 is the simpler one and may be used for all par and no-par issues, its use is assumed in the remaining examples in this chapter.

### SALE OF SECURITY UNITS

Corporations sometimes offer for sale for one lump sum *security units* consisting of several classes of securities. In recording sales of this kind, the sales proceeds

must be allocated among the different issues. When a sale consists of two different securities and there is a known market value for one of the securities, the sales value of the other may be determined by subtracting the known value from the sales price of the unit. To illustrate, assume that 1 share of common stock, par \$100, is offered with each \$1,000 bond at \$1,050. If the common stock is selling for \$80 per share, the issuance of common stock is recorded at this figure and the amount of the sales price applicable to the bonds is calculated as follows:

Unit price of \$1,000 bond together with 1 share of common . . .	\$1,050
Proceeds identified with common share (market value of common share) . . . . .	80
Proceeds identified with bond . . . . .	\$ 970

In recording the sale of a unit, discounts are recorded for the common stock and for the bond as determined by the computation above. The entry to record the sale of 100 units would be:

Cash . . . . .	105,000	
Discount on Common Stock . . . . .	2,000	
Discount on Bonds Payable . . . . .	3,000	
Common Stock . . . . .		10,000
Bonds Payable . . . . .		100,000

If two kinds of stock are offered as a unit, the procedure is similar. For example, assume that 2 shares of common, par \$50, are offered with 5 shares of preferred, par \$100, at \$550 per unit. If the preferred stock has a market value of \$98 per share, the sales price applicable to common stock is calculated as follows:

Unit price of 5 shares of preferred and 2 shares of common . . . . .	\$550
Proceeds identified with 5 shares of preferred (5 shares at 98) . . . .	490
Proceeds identified with 2 shares of common . . . . .	\$ 60

The entry to record the sale of 100 units, consisting of 500 shares of preferred and 200 shares of common, at \$550 per unit would be:

Cash . . . . .	55,000	
Discount on Preferred Stock . . . . .	1,000	
Discount on Common Stock . . . . .	4,000	
Preferred Stock . . . . .		50,000
Common Stock . . . . .		10,000

If, in the previous case, the price charged for each unit had been \$500, the common stock might have been designated a "bonus" and offered as an inducement on each purchase of preferred. The entry, however, should still reflect the market price of the several issues if determinable. Here the apportionment of proceeds to common and preferred stock would be made as follows:

Unit price of 5 shares of preferred and 2 shares of common	\$500
Proceeds identified with 5 shares of preferred (5 shares at 98)	490
Proceeds identified with 2 shares of common	\$ 10

The entry to record the sale follows:

Cash	50,000	
Discount on Preferred Stock	1,000	
Discount on Common Stock	9,000	
Preferred Stock		50,000
Common Stock		10,000

The use of treasury stock for purposes of a bonus may be favored if the contingent liability for a discount is to be avoided by stockholders.

If neither preferred nor common stock has a market value that can be applied in the apportioning of the proceeds, it may be necessary to charge the difference between the combined par values and the proceeds from the sale to the account Bonus to Stockholders. This balance would be a subtraction element in presenting corporate invested capital. The bonus account should be closed when an apportionment of sales proceeds to individual issues can be made. If the unit consists of bonds and shares of stock, however, neither of which have a market value, it will be necessary to estimate the amount at which the bonds could be sold, since the sale of bonds at a figure other than face value requires discount or premium amortization affecting the measurement of income of current and subsequent periods.

### **STOCK ISSUED FOR PROPERTY**

Previous examples have dealt primarily with the issue of stock for cash. When assets other than cash are received in exchange for stock, the fair market value of the stock or the fair market value of the property acquired, whichever is more clearly determinable, should be used as a basis for recording the property items and the related increase in invested capital. An established market value for the stock may be used in setting a value relating to the exchange. In the absence of such a value, appraisal of the assets would be appropriate in establishing a basis for recording the investment.

When assets other than cash are contributed for capital stock, the board of directors ordinarily has the right to establish valuations, which will stand for all legal purposes in the absence of proof that fraud was involved in the action. There have been instances where directors, in the exercise of their power to establish values, have assigned excessive values to assets in the attempt to avoid reporting the issue of stock at a discount. When the value of properties received in exchange for stock

cannot be clearly established and directors' valuations are used as a basis for reporting assets and invested capital, disclosure should be made on the statements of the basis for assigned valuations.

Stock is said to be *watered* when assets are overvalued and capital items are correspondingly overstated. On the other hand, the balance sheet is said to contain *secret reserves* when there has been a material undervaluation of assets or overstatement of liabilities with a corresponding understatement of capital.

#### **TREATMENT OF PREMIUM AND DISCOUNT ON SALE OF STOCK**

Amounts received on the sale of stock give rise to invested or paid-in capital. When amounts received on the sale of stock are greater than the value assigned to such stock, the excess is recorded as a part of paid-in surplus. Such paid-in surplus is added to the capital stock balance in arriving at the total invested capital and is properly carried on the books as long as the stock to which it relates is outstanding. Upon stock retirement and cancellation of a capital stock balance, cancellation of the related paid-in surplus element is called for. The cancellation of a preferred stock balance, for example, as a result of preferred stock redemption, should be accompanied by cancellation of a premium balance relating to that issue. While capital stock balances may not be used as a basis for dividends, laws of the state of incorporation may not place such limitations upon the use of paid-in surplus arising from stock sale. When paid-in surplus is used as a basis for dividends, stockholders should be informed that dividends represent a return of invested capital rather than a distribution of accumulated earnings.<sup>1</sup>

When stock is sold at less than par, a discount balance is recorded that should be related to the capital stock balance in presenting total invested capital. As previously indicated, such a discount balance indicates a claim that may be made by creditors upon stockholders acquiring stock at a discount in the event the company becomes insolvent; however, from a going-concern point of view, the discount may be regarded as a valuation or offset balance attached to capital stock.

There have been instances in the past when discounts on stock have been likened to discounts on bonds and have been reported as deferred charges, the discount balances then being written off against surplus balances or periodic revenue. Such practices are definitely objec-

<sup>1</sup>Laws of the state of incorporation may provide that paid-in surplus can be used for dividend purposes only under certain conditions. The California Corporations Code (1949), for example, permits the declaration of dividends "... out of paid-in surplus only upon shares entitled to preferential dividends." The law further states, "The corporation shall give notice to the shareholders receiving such dividends of the source thereof prior to or currently with the payment thereof." (Sec. 1500 [c].)

tionable. A discount on stock involves no asset element but is offset to capital stock in the measurement of the owners' investment in the enterprise. The absorption of a capital stock discount by either a paid-in surplus balance or earned surplus serves only to obscure the original stockholders' investment as well as the continuing contingent liability to creditors. A write-off of the discount on stock to current operations is even more objectionable, as such a practice obscures significant capital information and also distorts periodic revenue. The discount is properly carried on the books as long as the stock to which it relates is outstanding; upon stock retirement and cancellation of a capital stock balance, similar cancellation of a related discount balance would be required.

**CAPITAL STOCK  
ASSESSMENTS**

Some state laws of incorporation provide that a corporation by appropriate action may levy assessments upon stockholders when additional invested capital is required. Failure of a stockholder to comply with such special levies by the corporation may result in stock forfeiture. If stock was originally issued at a discount, an additional capital contribution will serve to reduce this discount; if legal capital requirements were fully met by original investments, assessments increase corporate paid-in surplus. A capital stock assessment and its subsequent collection would be recorded as follows:

Stock Assessments Receivable. . . . .	50,000	
Discount on Capital Stock (or Paid-In Surplus--		
From Stock Assessments). . . . .		50,000
Cash. . . . .	50,000	
Stock Assessments Receivable. . . . .		50,000

Most states require that stock be issued as nonassessable.

**ORGANIZATION  
COSTS**

The account Organization Costs should be charged for expenditures connected with the organization of the corporation. Costs include such items as legal fees, accounting fees, other fees relating to incorporation, promotional costs, stock certificate printing costs, and commission and expense for the sale or the underwriting of shares. As explained in Chapter 18, organization costs may be considered to benefit the corporation for its entire lifetime and hence may be carried indefinitely as an intangible asset. In practice, however, costs of organization are charged off to revenue over a relatively short period.

Under no circumstances should losses of early years be capitalized as organization costs. Such losses are impairments in the capital of the corporation and must be recognized as such. It is also wrong to include

a discount on the sale of stock as part of organization costs; as previously indicated, recognition of this item as an asset produces an overstatement of assets as well as of corporate invested capital.

### ISSUANCE OF STOCK IN EXCHANGE FOR A BUSINESS

The preceding pages have dealt largely with the sale of corporate stock for cash. Often a corporation, upon its formation or at some subsequent date, takes over a going business and issues stock to the proprietors in exchange for their equities. In determining the amount of the stock to be issued for business assets, the market value of the stock as well as the values of the properties acquired must be considered. Frequently the value of the stock transferred by the corporation will exceed the value of the tangible assets acquired because of the favorable earnings record of the business acquired. This excess may be considered as the amount paid for goodwill.

Where a sole proprietorship or partnership is incorporated to secure the advantages of the corporate form of organization, the books of the old organization may be used after the changes that have taken place as a result of the incorporation are recorded, or a new set of records may be opened. The accounting procedure to be followed in each instance will be illustrated. Assume that Martin and Moore, partners who share profits 3:2 respectively, desire to retire from active participation in their business, and they form a corporation to take over firm assets. The partnership balance sheet just before incorporation on March 15, 1954, follows:

#### MARTIN AND MOORE

##### BALANCE SHEET

MARCH 15, 1954

ASSETS			LIABILITIES AND CAPITAL	
Cash		\$ 8,600	Accounts payable	\$12,000
Accounts receivable	\$15,000		Martin, capital	50,000
Less Allowance for bad debts	400	14,600	Moore, capital	16,200
Inventories		20,000		
Equipment	\$50,000			
Less Allowance for depreciation	15,000	35,000		
Total assets		\$78,200	Total liab. and capital	\$78,200

The corporation is organized as the United Corporation and is authorized to issue 25,000 shares of no-par stock. Fifteen thousand shares are sold at \$10. The corporation takes over firm assets other than cash and assumes firm liabilities in exchange for the remaining

10,000 shares. In taking over net assets, the corporation makes the following adjustments:

- (1) The allowance for bad debts is increased to \$1,000.
- (2) Inventories are recorded at their present market value of \$23,500.
- (3) Equipment is recorded at its appraised reproduction cost of \$75,000 less an allowance on this basis of \$22,500.
- (4) Accrued expenses of \$400 are recorded.

The 10,000 shares received by the partners are divided as follows: Martin, 7,500 shares; Moore, 2,500 shares. The firm cash is then withdrawn by partners according to the balances remaining in their respective capital accounts.

*If Original Books Are Retained.* If the firm books are retained, entries are first made to indicate the changes in assets, liabilities, and the partners' interests prior to incorporation. A revaluation account may be charged with losses and credited with gains resulting from revaluation entries, and the balance in this account may subsequently be closed into the capital accounts in the profit and loss ratio. However, when there are relatively few asset changes, it is possible to debit or credit the partners' capital accounts directly in the profit and loss ratio for the net gain or loss resulting from the adjustments. The partners' capital accounts are then charged and Capital Stock is credited to record the issuance of stock in exchange for the partners' equities. Subsequent corporate transactions are now recorded in the old books that have become the records for the newly formed corporation. The entries to record the incorporation follow:

Transaction	Entry																					
(a) To record revaluation of assets upon transfer to United Corp., the net gain from revaluation and adjustments of \$20,000 being credited to Martin and Moore in the profit and loss ratio of 3:2 respectively.	<table><tr><td>Inventories . . . . .</td><td>3,500</td><td></td></tr><tr><td>Equipment . . . . .</td><td>25,000</td><td></td></tr><tr><td>    Allow. for Bad Debts. . . . .</td><td></td><td>600</td></tr><tr><td>    Allow. for Depreciation . . . . .</td><td></td><td>7,500</td></tr><tr><td>    Accrued Expenses . . . . .</td><td></td><td>400</td></tr><tr><td>    Martin, Capital . . . . .</td><td></td><td>12,000</td></tr><tr><td>    Moore, Capital . . . . .</td><td></td><td>8,000</td></tr></table>	Inventories . . . . .	3,500		Equipment . . . . .	25,000		Allow. for Bad Debts. . . . .		600	Allow. for Depreciation . . . . .		7,500	Accrued Expenses . . . . .		400	Martin, Capital . . . . .		12,000	Moore, Capital . . . . .		8,000
Inventories . . . . .	3,500																					
Equipment . . . . .	25,000																					
Allow. for Bad Debts. . . . .		600																				
Allow. for Depreciation . . . . .		7,500																				
Accrued Expenses . . . . .		400																				
Martin, Capital . . . . .		12,000																				
Moore, Capital . . . . .		8,000																				
(b) To record goodwill as indicated by excess of value of stock issued to partners over the appraised value of net assets transferred:	<table><tr><td>Goodwill . . . . .</td><td>22,400</td><td></td></tr><tr><td>    Martin, Capital . . . . .</td><td></td><td>13,440</td></tr><tr><td>    Moore, Capital . . . . .</td><td></td><td>8,960</td></tr></table>	Goodwill . . . . .	22,400		Martin, Capital . . . . .		13,440	Moore, Capital . . . . .		8,960												
Goodwill . . . . .	22,400																					
Martin, Capital . . . . .		13,440																				
Moore, Capital . . . . .		8,960																				
Value of stock issued (10,000 shares at \$10, amount at which stock is currently being sold) . . . . .	\$100,000																					
Value of net assets transferred:																						
Assets . . . . .	\$90,000																					
Less liabilities . . . . .	12,400	77,600																				
Goodwill credited to part- ners in profit and loss ratio . . . . .	\$ 22,400																					

Transaction	Entry
(c) To record distribution of capital stock according to agreement:	Martin, Capital..... 75,000
Martin—7,500 shares	Moore, Capital..... 25,000
valued at \$10..... \$ 75,000	Capital Stock..... 100,000
Moore—2,500 shares	
valued at \$10..... \$ 25,000	
(d) To record distribution of cash in final settlement of partners' claims according to balances in capital accounts:	Martin, Capital..... 440
Martin, capital after adjustment..... \$ 75,440	Moore, Capital..... 8,160
Less payment in stock... 75,000	Cash..... 8,600
Remaining equity paid in cash..... \$ 440	
Moore, capital after adjustment..... \$ 33,160	
Less payment in stock... 25,000	
Remaining equity paid in cash..... \$ 8,160	
(e) To record sale of 15,000 shares at \$10.	Cash..... 150,000
	Capital Stock..... 150,000

A balance sheet prepared for the corporation after the foregoing transactions is shown below:

## UNITED CORPORATION

## BALANCE SHEET

MARCH 15, 1954

ASSETS		LIABILITIES AND CAPITAL	
		LIABILITIES	
Cash.....	\$150,000	Accounts payable.....	\$12,000
Accounts receivable.....	\$15,000	Accrued expenses.....	400
Less allowance for bad debts.....	1,000		\$12,400
Inventories.....	23,500	CAPITAL	
Equipment.....	\$75,000	Capital stock, no-par, authorized and issued, 25,000 shares.....	250,000
Less allowance for depreciation.....	22,500		
Goodwill.....	22,400	Total liab. and capital	\$262,400
Total assets.....	\$262,400		

*If New Books Are Opened for the Corporation.* If new books are opened for the corporation, all of the accounts on the partnership books are closed and partnership assets and liabilities are recorded on the new records. In closing the partnership books, entries are made to record the transfer of assets and liabilities to the corporation, the receipt of capital stock, and the distribution of stock and cash in pay-



Transaction	Entry		
To record acquisition of assets and liabilities from Martin and Moore.	Accounts Receivable	15,000	
	Inventories	23,500	
	Equipment	75,000	
	Goodwill	22,400	
	Allow. for Bad Debts		1,000
	Allow. for Depreciation		22,500
	Accounts Payable	12,000	
	Accrued Expenses		400
	Liability to Martin and Moore, Vendors		100,000
To record issuance of stock in payment of net assets acquired.	Liability to Martin and Moore, Vendors	100,000	
	Capital Stock		100,000
To record sale of stock for cash.	Cash	150,000	
	Capital Stock		150,000

It may be mentioned that for income tax purposes, when individual owners of a business transfer assets and, after such a transfer, have control of the corporation, the value of the property transferred is the same for the corporation as it was for the parties making the transfer. For income tax purposes, then, depreciation would continue to be reported in terms of cost to the original owners, and any gain or loss on the disposal of the asset would be calculated on the basis of this cost less depreciation in terms of such cost.

## QUESTIONS

1. What are the four basic rights of stockholders?
2. Distinguish between: (a) a domestic corporation and a foreign corporation, (b) a stock corporation and a nonstock corporation, (c) an open corporation and a close corporation.
3. (a) Define legal or stated capital. (b) What limitations are placed upon the corporation by law to safeguard such legal capital?
4. (a) Distinguish between par stock and no-par stock. (b) What classes of no-par stock may be found?
5. Name the advantages and the disadvantages applying to no-par stock as compared with par-value stock.
6. (a) What preferences are usually granted to preferred stock? (b) What is meant by redeemable preferred stock? (c) What is meant by convertible preferred stock? (d) Distinguish between (1) cumulative and noncumulative preferred stock and (2) participating and nonparticipating preferred stock.
7. (a) Describe the method of accounting for the issuance of capital stock when authorized and unissued accounts are maintained. (b) Describe the method of accounting when accounts for these items are not maintained.

8. Indicate how each of the following account balances is reported on the balance sheet:

- (a) Capital Stock Subscriptions Receivable
- (b) Capital Stock Subscribed
- (c) Unissued Capital Stock
- (d) Authorized Capital Stock

9. Describe each of the following records: (a) minute book, (b) subscribers ledger, (c) stockholders ledger, (d) stock certificate book.

10. The Wallace Corporation reports subscriptions to capital stock as a subtraction from paid-in capital balances on the balance sheet. What support may there be for such a treatment?

11. The Benson Co. treats proceeds from capital stock subscription defaults as miscellaneous income. Would you approve this practice?

12. (a) How should cash proceeds be assigned to individual securities when two different securities are issued for one lump sum? (b) Would your answer differ if one of the securities is designated a "bonus"? Give reasons for your answer.

13. (a) What is meant by "watered stock"? (b) What are "secret reserves"?

14. The Gordon Co. has applied a discount on common stock against a premium on preferred stock and reports paid-in surplus at the net credit balance. What objections, if any, do you have to such a treatment?

15. (a) What is a capital stock assessment? (b) What entry is made upon the collection of such an assessment if (1) shares were originally issued at a discount and (2) shares were originally issued at par?

16. (a) What expenditures may be properly recorded as organization costs? (b) The Cramer Co. gives 5,000 shares of no-par stock valued at \$50,000 to promoters of the corporation and incurs expenses of \$30,000 in the sale of stock upon the formation of the corporation. How do you recommend that each of these transactions be recorded?

17. (a) Indicate the accounting procedures that are followed when a partnership is incorporated and the partnership books are to be retained as the accounting records for the new unit. (b) What accounting procedures are followed when a new set of records is to be established for the corporation?

18. The Walsh Company acquires the assets of the Goodman Company in exchange for 10,000 shares of its common stock, par value \$10. (a) Assuming that the appraised value of the property acquired exceeds the par value of the stock issued, how would you record the acquisition? (b) Assuming that the par value of the stock issued exceeds the appraised value of the property acquired, suggest two methods for recording the acquisition. What factors will determine the method to be used?

## EXERCISES

1. The Dayton Co. pays out dividends at the end of each year as indicated: 1951, \$50,000; 1952, \$150,000; 1953, \$240,000. Give the amount payable per share on common and preferred stock each year, assuming capital structures as follows:

- (a) 200,000 shares of no-par common; 10,000 shares of \$100, 6%, non-cumulative, nonparticipating preferred.
- (b) 200,000 shares of \$10 common; 10,000 shares of \$100, 6%, cumulative, fully participating preferred, dividends two years in arrears at the beginning of 1951.
- (c) 200,000 shares of \$10 common; 10,000 shares of \$100, 6%, cumulative nonparticipating preferred.
- (d) 200,000 shares of \$10 common; 10,000 shares of \$100, 6%, non-cumulative preferred participating up to  $7\frac{1}{2}\%$ .

2. The Bushnell Corporation was organized on May 15, 1953. It immediately sold its authorized stock of 100,000 shares at 12. What entries are required for the stock issue under each of the following assumptions:

- (a) Shares have a par value \$10.
- (b) Shares are no-par without a stated value.
- (c) Shares are no-par with a stated value of \$5 as assigned by the board of directors.

3. The Davidson Corporation is organized with authorized capital as follows: 20,000 shares of no-par common and 2,000 shares of 6% preferred, par \$100. What entries are required for each of the following transactions:

- (a) Assets formerly owned by E. Case are accepted as payment for 6,000 shares of common. Assets are recorded at values as follows: land, \$15,000; buildings, \$25,000; inventories, \$80,000.
- (b) Remaining common stock is sold at 25.
- (c) Subscriptions are received for 2,000 shares of preferred at 105. A 10% down payment is made on preferred.
- (d) One subscriber for 100 shares of preferred defaults and his down payment is retained pending sale of this lot. Remaining subscribers pay the balances due and the stock is issued.
- (e) Lot of 100 shares of preferred is sold at 102. Loss on resale is charged against the account of the defaulting subscriber, and the down payment less the loss is returned to him.

4. Ten shares of Beck, Ltd., with a par value of \$100, are subscribed for at par. The subscriber defaults after he has paid \$450. This stock is later sold for \$950 cash. What entries are required if (a) no refund is made to the defaulting subscriber, (b) a refund is made of the cash paid less the discount allowed when the stock is resold?

5. Staley, Inc. receives authorization to issue 5,000 shares of common stock, par \$100. Subscriptions are received for 3,000 shares at \$105, cash is received in full, and the stock is issued. (a) What entries would be made if the unissued and authorized accounts are used in recording subscriptions? (b) How would the capital section of the balance sheet appear after the foregoing transactions?

6. The trial balance of a corporation includes the following items: Unissued Stock, \$60,000; Capital Stock Authorized, \$100,000; Discount on Stock, \$4,000; Subscriptions Receivable, \$16,000; Capital Stock Subscribed, \$40,000. How much cash has been collected from the sale of stock?

7. The Borden Co. issues 10,000 shares of preferred and 100,000 shares of common, each with a par value of \$10, in exchange for properties appraised at \$1,000,000. What entry would you make to record the exchange on the books of the corporation assuming that:

- (a) No price can be assigned at date of issuance to preferred or common issues.
- (b) Common is selling on the market at  $\$8\frac{1}{2}$  per share; there was no preferred stock prior to this issue.
- (c) Common is selling on the market at  $\$9\frac{1}{4}$  per share; there was no preferred stock prior to this issue.

8. Wells, Inc. sells 1,000 shares of its 5% cumulative preferred stock, par \$100, to its bankers at \$120 a share, giving 1 share of common stock, par \$50, as a bonus with each 2 shares of preferred. The market value of the preferred stock immediately following the sale is \$105 per share. What is the entry for the sale?

9. Bonds of \$1,000,000 are sold at face value, 5 shares of common stock, par \$10, being offered as a bonus with each \$1,000 bond. At the time the bonds are sold on this basis, stock is selling on the market at \$12 per share. What entry would be made to record the sale of the bonds?

10. The Gary Corporation has 10,000 shares of 6%, \$100 par preferred stock outstanding, dividends being paid semiannually on July 1 and January 1. On May 1, 1953, it sells an additional 2,000 shares of preferred at \$105 plus \$2 for "accrued dividends to date." On July 1, 1953, it makes a semiannual dividend payment on preferred stock. What entries would you make to record (a) the sale of the shares and (b) the payment of the dividend?

11. The ledger of Farris and Simpson shows the following data on December 31: Assets, \$53,000; Liabilities, \$23,000; Farris, Capital, \$12,000; Simpson, Capital, \$18,000. The partners decide to sell the business to Distributors, Inc. in exchange for 4,000 shares of that corporation's \$10 par common stock. The market value of the stock at this time is \$12. What entries are required (a) to record the purchase in the corporation accounts and (b) to close the books of the partnership? (c) How many shares in the new corporation will be distributed to each partner?

12. A balance sheet for Miller and Morton, prepared on March 15, appears at the top of the opposite page. Partners share profits in the ratio of 3:1 respectively.

The Webster Co. issues 4,000 shares of its \$1 par stock to the partners in exchange for partnership assets other than cash. The corporation also agrees to assume firm obligations. On this date the corporation stock

MILLER AND MORTON

BALANCE SHEET

MARCH 15, 19--

ASSETS		LIABILITIES AND CAPITAL	
Cash.....	\$ 2,400	Accounts payable .....	\$ 3,400
Accounts receivable \$ 6,200		Miller, capital .....	23,900
Less: Allowance		Morton, capital.....	19,200
for bad debts. . . . . 400	5,800		
Inventories .....	10,300		
Equipment.....	\$25,000		
Less: Allowance			
for depreciation of			
equipment.....	7,000 18,000		
Goodwill.....	10,000		
	<hr/>		
Total assets.....	\$46,500	Total liab. and capital . . . .	\$46,500

has a market value of \$10 per share. In dissolving the firm, Miller agrees to take 2,200 shares and Morton 1,800 shares. The firm cash is then appropriately divided between the partners. What are the entries to record the foregoing on the books of the partnership and on the new books of the corporation, assuming that the corporation retains tangible asset valuations as shown on the firm books?

PROBLEMS

20-1. The Proctor Co. was organized on October 10,1953, with authorized capital stock as follows:

- 4½% Cumulative Preferred, par \$100 . . . . . 1,000 shares
- Common, no-par . . . . . 20,000 shares

Statutes of the state of incorporation provide that the board of directors may set a stated value on no-par stock, but that such a stated value shall not be less than \$10. The board of directors sets the stated value at this minimum.

During the remainder of 1953 the following transactions take place:

- (a) Assets of Proctor and Proctor are taken over in exchange for 10,000 shares of common stock. Assets of the partnership are appraised as follows:

- Merchandise Inventory . . . . . \$40,000
- Land, Buildings, and Equipment..... 35,000

The excess of the stated value of the stock issue over the appraised value of tangible assets acquired is regarded as payment for goodwill.

- (b) 500 shares of preferred stock were sold at par.
- (c) 2,500 shares of common stock were sold at \$10.
- (d) Subscriptions were received for 5,000 shares of common at 10½; the stock is to be paid for in two equal installments, 50% being paid on the

date of subscription and 50% to be paid within 60 days from the date of subscription.

- (e) By December 31, \$15,750 had been collected from subscribers as second installments on common subscriptions, and fully paid stock was issued.

*Instructions:* (1) Give the journal entries to record the foregoing transactions, assuming the use of unissued and authorized accounts in the ledger.

(2) Give the journal entries to record the foregoing transactions, assuming that unissued and authorized accounts are not used.

- (3) Give the capital section of the balance sheet on December 31, 1953.

**20-2** The Haywood Corporation is organized on May 1, 1953, and is authorized to issue stock as follows:

100,000 shares of no-par common stock with a stated value of \$10

5,000 shares of 5% preferred stock with a par value of \$50

Capital stock transactions were as follows:

May 15. Subscriptions were received for all of the common stock at 15 on the following terms: 10% is paid in cash at the time of subscription, the balance being payable in three equal installments due in 30, 60, and 90 days respectively.

June 1. All of the preferred stock is sold to an investment company for cash at  $47\frac{1}{2}$  and stock is issued.

June 15. Collected the first installment on subscriptions to 97,600 shares. Terms of the subscription contract provide that defaulting subscribers have 30 days in which to make payment and obtain reinstatement; failure to make payment within the specified period will result in the forfeiture of amounts already paid in.

July 15. Collected the second installment on common subscriptions. Collections include receipt of the first and second installment on 400 shares from subscribers who defaulted on their first installment; however, subscribers to 500 shares default in addition to those already in default.

Aug. 15. Collected the third installment on common subscriptions. Collections include receipt of the second and third installment from subscribers to 400 shares who defaulted on their second installment. Stock certificates are issued to fully paid subscribers.

Sept. 1. Stock in default is sold to an investment company at  $12\frac{1}{2}$ .

*Instructions:* (1) Give the journal entries to record the transactions listed above.

- (2) Prepare a balance sheet summarizing the above.

**20-3.** The Olson Manufacturing Company is incorporated on February 28 with authorized common stock of \$750,000 and 6% cumulative preferred stock of \$250,000, each class with a par value of \$100.

Subscriptions are taken for 6,000 shares of common stock at \$112 a share, to be paid for in four equal installments on March 1, April 1, May 1, and June 1. The first installment is paid in full. Subscribers for 200 shares default on the second installment, and the amounts already received are returned to the defaulting subscribers. The second, third, and fourth

installments are paid in full on their due dates by the remaining subscribers, and the stock is issued.

During March, preferred stock is offered for sale at \$120, 1 share of common stock being offered as a bonus with each subscription for 10 shares of preferred. On this basis subscriptions are received for all of the preferred stock. Subscriptions are payable in two equal installments: the first is payable during March at the time of subscription and the second is payable at any time prior to June 15. The first installment is paid in full. By June 1, \$120,000 has been received on the second installment, and stock is issued to the fully paid subscribers.

*Instructions:* (1) Journalize the above transactions.

(2) Prepare a balance sheet as of June 1 reflecting the foregoing.

**20-4.** The Wagner Corporation was organized on October 1 with an authorized capital stock of 15,000 shares of 5% cumulative preferred with a \$25 par value and 200,000 shares of no-par common with a stated value of \$20 per share. During the balance of the year the following transactions relating to capital stock were completed:

- Oct. 1. Subscriptions were received for 60,000 shares of common stock at  $27\frac{1}{2}$ , payable \$10 down and the balance in two equal installments due November 1 and December 1. On the same date 10,000 shares of common stock were issued to W. R. Wagner in exchange for his business. Assets transferred to the corporation were valued as follows: land, \$100,000; buildings, \$95,000; equipment, \$35,000; merchandise, \$86,500. Liabilities of the business assumed by the corporation were: mortgage payable, \$32,500; accounts payable, \$12,500; accrued interest on mortgage, \$375. No goodwill is recognized in recording the issuance of the stock for net assets.
- Oct. 3. Subscriptions were received for 10,000 shares of preferred stock at 30, payable \$12 down and the balance in two equal installments due on November 1 and December 1.
- Nov. 1. Amounts due on this date were collected from all common and preferred stock subscribers.
- Nov. 12. Subscriptions were received for 40,000 shares of common stock at 28, payable \$10 down and the balance in two equal installments due December 1 and January 1.
- Dec. 1. Amounts due on this date were collected from all common stock subscribers and fully paid stock was issued. The final installment on preferred stock subscriptions was received from all subscribers except one whose installment due on this date was \$13,500. State incorporation laws provide that the company is liable for the return to the subscriber of the amount received minus the loss on the subsequent resale of the stock. Preferred stock fully paid for was issued.
- Dec. 6. Preferred stock defaulted on December 1 was sold for cash at  $26\frac{1}{2}$ . Stock was issued, and settlement was made with the defaulting subscriber.

*Instructions:* (1) Prepare journal entries to record the foregoing transactions.

(2) Prepare the capital section of the balance sheet for the corporation as of December 31.

**20-5.** Ashton and Bills, partners, who share profits and losses in a ratio of 3:2 respectively, wish to retire from active participation in their manufacturing business and decide to form a corporation to take over the firm assets. The partnership balance sheet prepared on March 1 appears below:

**ASHTON AND BILLS**  
BALANCE SHEET  
MARCH 1, 1954

ASSETS		LIABILITIES AND CAPITAL	
Cash.....	\$ 30,000	Notes payable.....	\$ 7,000
Notes receivable ..	16,000	Accounts payable ..	45,000
Accounts receivable ..	60,000	Wages payable ..	1,500
Inventories ..	66,500	Ashton, capital ..	77,000
Machinery ..	\$80,000	Bills, capital ..	99,000
Less: Allowance for depreciation ..	56,000		
	24,000		
Building ..	\$45,000		
Less: Allowance for depreciation ..	32,000		
	13,000		
Land ..	20,000		
<b>Total assets .....</b>	<b>\$229,500</b>	<b>Total liab. and capital .....</b>	<b>\$229,500</b>

The partners, together with Coleman and Daley who wish to join the new enterprise, agree to the following:

- (a) The corporation to be formed shall be known as the Arizona Sales Corporation, and its authorized stock shall consist of 50,000 shares of common stock, par \$5, and 2,000 shares of 6½% preferred stock, par \$100.
- (b) Partnership assets other than cash are to be transferred to the corporation and the liabilities are to be assumed by the corporation. The corporation is to issue all of its preferred stock in payment for net assets acquired. (It is assumed that the stock is worth par value.) The stock is to be divided equally between Ashton and Bills, and the partnership cash is then to be withdrawn by the partners in settlement of their equities. The corporation records firm properties other than plant and equipment at book value. Plant and equipment are recorded at current sound values as follows:
 

Machinery .....	\$35,000
Building .....	19,000
Land .....	42,000
- (c) Coleman shall take charge of the organization of the corporation and shall be allowed 3,000 shares of common stock in full payment for his services.
- (d) Daley, who owns valuable patent rights, shall be given 10,000 shares of common stock upon transfer of these rights to the corporation.

The Arizona Sales Corporation is incorporated on March 1 when the foregoing takes place.

*Instructions:* (1) Prepare the entries to record the transfer of assets and liabilities to the corporation, and the distribution of stock and cash on the partnership books.

(2) Prepare the entries for the separate corporation books.

(3) Prepare a balance sheet for the corporation on March 1 after the foregoing transactions have been recorded.

**20-6.** Kamm, Leeds, and Morse, partners sharing profits 2:2:1 respectively, draw up the following partnership balance sheet on March 1:

**KAMM, LEEDS, AND MORSE**

**BALANCE SHEET**

MARCH 1, 19

ASSETS		LIABILITIES AND CAPITAL	
Cash	\$ 19,320	LIABILITIES	
Accounts receivable	41,310	Accounts payable	\$ 17,600
Merchandise inventory	44,000	Notes payable	10,000
Furniture and fixtures	\$16,500	Total liabilities	\$ 27,600
Less: Allowance for depreciation	4,950		
	11,550	CAPITAL	
		Kamm, capital	\$ 36,600
		Leeds, capital	27,560
		Morse, capital	24,420
		Total capital	88,580
Total assets	\$116,180	Total liabilities and capital	\$116,180

The partners incorporate on this date as the K-L-M Corporation with an authorized capital stock as follows:

Preferred stock, 10,000 shares, par \$10

Common stock, 10,000 shares, par \$10

The partners agree to the following:

(1) The following adjustments are to be made in asset values:

- (a) An allowance for doubtful accounts is to be established at 5% of accounts receivable.
- (b) Furniture and fixtures are to be raised to present replacement costs of \$19,500 less a depreciation allowance of 30% on such costs.
- (c) Expenses of \$650 have been prepaid and are to be recognized as an asset.

(2) Each partner is to be paid for his partnership equity as follows, it being assumed that stock has a value equal to its par:

- (a) 1,500 shares of preferred are to be allowed to each partner.
- (b) Remaining capital interests are to be paid for with common stock, in even multiples of 100 shares, each partner to be paid cash for any capital balance in excess of the highest 100-share multiple that can be issued.

The above adjustments and transactions are completed and shares not required for the settlement of the partners' interests are immediately sold at par.

*Instructions:* (1) Give journal entries to record the incorporation, assuming that it is to be reflected on the partnership books, no new books being opened by the corporation.

(2) Prepare a balance sheet for the corporation. (Assume that transactions are completed on March 1.)

**20-7.** The Apex Company formed a new corporation — the Vale Company — and on January 1, 1954, paid \$100,000 for the entire authorized capital stock, as follows: 10,000 shares of no-par value (stated value, \$5 a share).

On the same date the new corporation acquired for \$100,000 in cash the business formerly conducted by Baker & Owen. The tangible assets acquired and the liabilities assumed as recorded on the books of Baker & Owen were as follows: accounts receivable, \$25,200; inventory, \$9,600; 4% bonds, par value, \$5,000; land, \$15,400; building, less depreciation, \$25,000; equipment, less depreciation, \$4,300; mortgage payable, \$15,000; accounts payable, \$25,000.

The building was purchased January 1, 1944; \$5,000 of equipment on January 1, 1943, and \$6,000 on January 1, 1952. Depreciation is said to have been recorded on a straight-line basis at the following rates: equipment, 10% per annum; building, 5% per annum to December 31, 1948, and 2½% thereafter.

The cash transactions of the Vale Company for the three months ended March 31, 1954, are summarized as follows:

<i>Receipts</i>	
10,000 shares of capital stock . . . . .	\$100,000
Accounts receivable collected . . . . .	65,000
\$3,000 par value of 4% bonds—sold February 28, 1954 . . .	2,800
Accrued interest on bonds sold . . . . .	20
\$100,000 par value 5% debentures of Vale Company due January 31, 1964 (issued January 31, 1954) . . . . .	90,000
	<u>\$257,820</u>

<i>Disbursements</i>	
Payment to Baker & Owen . . . . .	\$100,000
Merchandise . . . . .	60,000
Mortgage and accounts payable at January 1, 1954 . . . . .	40,000
Selling, general, and administrative expenses . . . . .	20,000
Life insurance premium . . . . .	2,000
Organization expense . . . . .	1,500
	<u>\$223,500</u>

On March 31, 1954, accounts receivable amounted to \$80,000; accounts payable for merchandise, \$35,000; and for expenses, \$3,000; the inventory was valued at \$40,000; and prepaid expenses were computed at \$1,000.

According to the directors' minutes, the building and equipment are to be recorded at cost to Baker & Owen, less depreciation on a straight-line basis at 2½% and 10% per annum respectively, and the other assets at the value shown by the books of Baker & Owen. Organization expense is to be written off in January, 1954, and depreciation is to be provided on the revised basis stated in the minutes.

*Instructions:* Prepare a balance sheet as of March 31, 1954, including provision for federal income tax at 30 per cent, and an income account for the three months ended March 31, 1954. (Assume that the company is the beneficiary on the life insurance policy; hence the premium is nondeductible for income tax purposes.) (A.I.A. adapted)

20-8. Following is the trial balance of the recently organized Dry Ridge Golf Club on December 31, 1953:

	DR.	CR.
Cash in bank.....	\$ 7,225	
Accounts receivable, members.....	11,160	
Buildings.....	54,500	
Equipment.....	8,500	
Golf course construction.....	130,000	
Labor.....	26,285	
Golf course supplies and expense.....	12,446	
General expense.....	4,213	
Interest paid.....	5,617	
Rent.....	6,000	
Commissions—soliciting membership.....	1,100	
Notes payable—bank.....		\$ 10,000
Accounts payable.....		2,341
Entrance fees.....		146,250
Dues.....		22,950
"Green" fees.....		5,015
Taxes on dues and entrance fees.....		490
Entrance fees underwritten.....		80,000
	\$267,046	\$267,046

A proprietary membership in the club costs \$1,000, plus \$100 tax.

An analysis of the entrance fees account shows that it includes \$110,000 paid in, fully paying 110 memberships, and \$36,250 collected from 60 members. The balance due from these 60 members, plus the tax thereon, is secured by notes for their original unpaid balance. These notes are on hand but not entered.

In September, 1953, a special committee appointed for the purpose handed in a statement with a list of 80 members, each of whom promised to obtain a new member and to advance the entrance fee of this member at once, subject to repayment when the new member paid in his fee; accordingly, the following entry was then made:

Accounts receivable, members.....	80,000	
To entrance fees underwritten.....		80,000

Of the above \$80,000, \$70,000 had been collected from the underwriters at December 31, 1953. Nothing had been repaid to the underwriters on account of new members, although 10 such new members had been elected in December and had paid in \$8,800 in cash and signed notes for \$2,200 for entrance fees and taxes.

Dues are \$200 a year, plus 10% tax, payable quarterly in advance, and have been chargeable and entered on April 1, July 1, and October 1, 1953.

Included in "Accounts receivable, members" are accounts totaling \$330 for dues and taxes against two members who have been delinquent for nine months, and accounts aggregating \$770 for dues and taxes of

eight other members. Collections can be enforced only by deduction from the proceeds of sale of such memberships after the complement of 300 members is attained.

The building account includes:

Caddy and locker house . . . . .	\$10,000
Architect's plans for a club house, discarded as proposal appeared too expensive . . . . .	3,000
Architect's fees for new house . . . . .	1,500
Payments under a cost-plus contract for the club house (under construction December 31, 1953) with a guaranteed maximum cost of \$50,000 . . . . .	40,000
	—
	\$54,500
	—

The golf course was finished and opened on June 30, 1953. At that date, the club being obliged to maintain the course since the original construction contract was completed, the operating accounts stood as follows:

Debits:

Labor . . . . .	\$10,116
Golf-course supplies and expense . . . . .	4,539
General expense . . . . .	916
Interest paid . . . . .	2,890
Rent . . . . .	6,000

Credits:

Dues . . . . .	\$ 5,950
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The club leases its real estate, for which it pays an annual rental of \$6,000, payable January 1 in advance.

The estimated life of the equipment is five years from June 30, 1953.

Of the liability on the books for taxes on dues, \$390 is now payable to the director of internal revenue, representing collections in December.

*Instructions:* (1) Prepare the journal entries that should be made on the books as of December 31, 1953, and January 1, 1954, disregarding closing entries, as the fiscal year ends June 30.

(2) Submit a statement of assets and liabilities as of the opening of business on January 1, 1954. (A.I.A. adapted)

**20-9.** The stockholders of the Agricultural Machinery Co., vendors of horse-drawn machinery, resolved at their meeting on June 13, 1953, to liquidate as of August 31, 1953. The May 31, 1953, financial statement on which the stockholders predicated their decision to liquidate is given at the top of the opposite page.

According to the stockholders' resolution of June 13, the liquidation is to be effected by the directors (who, being principal stockholders, serve without compensation) as follows:

"The \$15,000 cash bid of a local real estate operator for the equity in the land and building is to be accepted immediately, the purchaser to assume the outstanding mortgage of \$10,000 and to pay all expenses of title search, closing, etc. Title is to pass as of June 30, 1953, and Agricultural Machinery Co. is to pay mortgage interest accrued to that date.

## AGRICULTURAL MACHINERY CO.

## BALANCE SHEET

MAY 31, 1953

ASSETS

Cash	\$ 36,750
Accounts receivable	33,500
Inventory of merchandise	120,250
Furniture, fixtures, trucks, etc., less reserve	20,500
Land and building, less reserve	30,000
Total assets	<u>\$241,000</u>

LIABILITIES

Accounts payable, including taxes	\$ 15,600
Interest accrued on mortgage	250
Accrued payroll	450
6% Mortgage due January 1, 1955	10,000
Total liabilities	<u>\$ 26,300</u>

CAPITAL

Capital stock, 4,200 shares, par value \$50		\$210,000
Surplus balance at Jan. 1, 1953	\$ 24,050	
Less loss for 5 mos. to May 31, 1953	19,350	4,700
Total capital		214,700
Total liabilities and capital		<u>\$241,000</u>

Insurance and taxes prepaid prior to June 30, 1953, are to be absorbed by vendor.

"All merchandise on hand is to be offered for sale at 80% of regular sales prices; such special sale to be conducted from June 17 to June 26 (both dates inclusive). These sales are to be on a strictly cash basis and to be final—no returns permitted.

"An auction is to be conducted on June 29 on the company's premises and is to include all merchandise not disposed of during the previous 10-day sale. All furniture, fixtures, trucks, and other equipment are also to be auctioned at this time. All sales made at such auction are to be strictly cash and final.

"Any merchandise still remaining unsold after the auction is to be advertised daily in newspapers of neighboring communities and disposed of at best prices obtainable.

"All employees, except the manager-bookkeeper, are to be given immediate notice of their release, at the close of business on June 30, and to be paid up to July 31. The manager-bookkeeper is to be given immediate notice of his release effective August 31, 1953, on which date he will be paid his salary for the four months ending December 31.

"A liquidating dividend (final) is to be paid on September 2, 1953, as of August 31, 1953, to all stockholders of record as at August 31, 1953."

Sale of merchandise to regular customers on credit for the period from June 1 to 16 inclusive amounted to \$9,500 and were merged with the liquidation sales. All merchandise unsold after the auction was finally disposed of in August.

Depreciation subsequent to May 31, 1953, may be ignored.

Following is a summary of the cash transactions for the three months ended August 31, 1953:

<u>CASH TRANSACTIONS</u>		DR.	CR.
June	Cash sales—regular	\$ 5,850	
	Accounts receivable collections	23,500	
	Cash sale (special 20% discount)	47,350	
	Cash received from auction sales		
	Merchandise	31,500	
	Furniture, fixtures, and trucks	8,250	
	Auctioneer's commission and expenses		\$ 2,850
	Interest on mortgage paid to June 30		300
	Proceeds from sale of land and building	15,000	
	Officers and office salaries (including separation payments and \$450 accrued payroll)		5,550
	Accounts payable		15,600
July	Accounts receivable collections	1,250	
	Post-auction sales		
	Merchandise	3,500	
	Furniture, fixtures, and trucks	2,300	
	Salary of manager-bookkeeper for July		400
Aug.	Accounts receivable collections (final)	3,700	
	Collection agency fees		375
	Salary of manager-bookkeeper (including separation payment)		2,000
	Legal fees and expenses re liquidation		675
		\$142,200	\$27,750

*Instructions* (1) Prepare the necessary adjusting entries

(2) Prepare a columnar work sheet showing the postings of the cash transactions, the adjustments, and the cash available for final distribution.

(3) Prepare a statement of loss on realization and expenses of liquidation.

(4) Prepare a statement showing the amount of cash to be distributed as a liquidating dividend to each of the following stockholders:

A	1,600 shares
B	1,200 shares
C	900 shares
D	360 shares
E	140 shares

Total	4,200 shares	(A.I.A. adapted)
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## Capital Stock Changes Subsequent to Formation

### PREFERRED STOCK REDEMPTION

Terms of the preferred stock contract frequently provide that the stock may be called for retirement by the issuing company. Redemption normally calls for payment of an amount in excess of the original issuance price as well as accrued dividends to the date of call.

The original sale of stock results in an increase in net assets and the expansion of corporate capital. The reacquisition and retirement of stock results in a decrease in net assets accompanied by a contraction of corporate capital. Such a contraction should first be applied to capital balances arising from the original sale of stock. To illustrate, assume the sale of 1,000 shares of preferred stock, par \$100, at 102. The entry to record the sale is:

Cash.....	102,000	
Preferred Stock.....		100,000
Premium on Preferred Stock .....		2,000

Redemption of the stock at the issuance price and its retirement would call for the following entry:

Preferred Stock.....	100,000	
Premium on Preferred Stock.....	2,000	
Cash .....		102,000

With this entry, all reference to the original source of capital disappears.

Assume that the preferred stock is retired at a price of 105. In this instance, the return of invested capital is accompanied by a bonus payment to preferred stockholders. The bonus should not be regarded as a distribution of the invested capital of other classes of stockholders but rather as a distribution of retained earnings accompanying the liquidation of the preferred equity. The following entry would be appropriate:

Preferred Stock.....	100,000	
Premium on Preferred Stock.....	2,000	
Earned Surplus.....	3,000	
Cash.....		105,000

All reference to the preferred stockholder group disappears; earned surplus is reduced in the process of redemption, but as a result of this charge, remaining stockholders may now view the balance of earned surplus as wholly identified with their equities.

Assume, however, that the corporation is able to retire its own stock at less than the original issuance price. The difference between the original amount invested by stockholders and the subsequent amount paid for retirement of their interest should not be considered a gain that increases earned surplus. Here a portion of the capital originally invested by the preferred stockholders has been retained by the corporation. The withdrawal by owners does not affect the nature of this capital; it is still capital that originated from an investment source and not from profitable operations. Profit and loss emerges from transactions between the business unit and outsiders and not from capital transactions between the business unit and its owners; transactions falling within the latter category give rise to changes in invested capital.<sup>1</sup> The retirement of preferred stock in the previous example at a price of 101 may be recorded in the following manner:

Preferred Stock.....	100,000	
Premium on Preferred Stock.....	2,000	
Cash.....		101,000
Paid-In Surplus — From Preferred Stock Redemption.....		1,000

Since the preferred stock balance is canceled, cancellation of the premium account that is identified with the capital stock balance is likewise in order. The net amount of invested capital retained by the corporation is reflected in a separate account that explains the nature of the capital item.

When preferred stock is redeemed, there is a reduction in the corporate legal or stated capital. State law does not bar the reduction of legal or stated capital when stock is issued subject to redemption and redemption is made at a price as provided for by the original terms of the issue.

### **TREASURY STOCK**

When a company's own stock once issued is reacquired and held without cancellation, it is known as *treasury stock*. A company may acquire its own stock by purchase, by acceptance in satisfaction of a claim, or by acceptance as a donation from stockholders. Such stock, if formally canceled in accordance with requirements of state law, would revert to the status of unissued stock and would be accompanied by a reduction in legal or stated capital. In the absence of such formal action, the stock is regarded as treasury stock and the legal or stated capital of the corporation is unaffected by the stock reacquisition.

<sup>1</sup>Note that in the previous example the payment of an amount in excess of original contribution by owners was viewed not as a *loss* arising from transactions between the corporation and its stockholders but as a *distribution of accumulated earnings* relating to the preferred equity.

The preservation of legal or stated capital for protection to the creditor group calls for certain conditions precedent to the acquisition of treasury stock by purchase. Ordinarily, state statutes provide that treasury stock can be purchased only when the company's surplus balance is equal to or in excess of the amount to be paid for such stock. Treasury stock acquisition serves to restrict surplus from use as a basis for dividends; the reissue of the stock usually serves to remove the surplus restriction. The purchase limitation may be based upon the corporation's total surplus, but frequently it is based upon the earned surplus balance. To illustrate the effect of such legislation, assume the capital of a corporation to be as follows:

Capital Stock, 10,000 shares, par \$10	\$100,000
Earned Surplus . . . . .	50,000

The company here can declare dividends out of retained earnings of \$50,000; net assets of the company would remain \$100,000 and creditors would continue to be safeguarded by owners' capital of \$100,000 as reported in the capital stock account. But assume the reacquisition by the company of a part of its outstanding stock at a price of \$40,000. If dividends of \$50,000 were still permitted and dividends of this amount were paid, protection to creditors would shrink to \$60,000, capital being impaired by the purchase of stock and the payment of dividends, a total of \$90,000. With a reduction in the company's ability to pay dividends to \$10,000 upon the purchase of treasury stock for \$40,000, the original representation as to protection to the creditor group is assured; the sum of payments for treasury stock purchases and possible dividends will not shrink net assets below the legal capital reported in capital stock, \$100,000. Upon sale of the treasury stock and the recovery of the treasury stock outlay, dividends may once more be paid to the extent of the earned surplus balance.<sup>1</sup>

Despite the fact that the legal capital remains the same after the reacquisition of a company's stock by purchase, treasury stock cannot be viewed as an asset but must be regarded as a reduction in corporate capital. A company cannot have an ownership interest in itself; treasury stock confers upon the corporation no rights as to dividends, voting, liquidation, or pre-emption. Treasury stock, as a matter of fact, may be regarded in exactly the same manner as unissued stock except for one matter: having already been issued in accordance with

<sup>1</sup>In some states, the purchase of treasury stock results in a permanent reduction in earned surplus by the amount paid for the stock. Purchase of treasury stock is thus treated, in effect, as a dividend. This is the rule in California. A purchase of treasury stock in this state calls for a charge to earned surplus; the capital stock account continues to report the original legal capital at par or stated value despite the reduced number of shares outstanding.

legal requirements governing legal or stated capital, its resale is possible without the conditions that are imposed upon the original issuance of stock. Since the capital stock balance is to be preserved in the accounts, treasury stock becomes a subtraction element in the capital section.

### **ENTRIES FOR TREASURY STOCK**

A number of different methods have been suggested for recording transactions involving treasury stock. These different methods are the products of two general approaches that may be taken to the problem of treasury stock acquisitions:

- (1) Treasury stock acquisitions may be viewed as the retirement of a portion of outstanding stock.
- (2) Treasury stock acquisitions may be viewed as a capital element whose ultimate disposition still remains to be resolved.

The two approaches are described in the following sections. Descriptions are accompanied by illustrations of methods for recording treasury stock that will give effect to the different views presented.

**First Approach: Treasury Stock Viewed as Capital Retirement.** The acquisition of treasury stock may be regarded as the withdrawal of a part of the stockholder group calling for the contraction of capital balances identified with this group. It follows that the resale of treasury stock represents the admittance of a new group of stockholders calling for an expansion of capital balances to give effect to the investment by this group. The American Accounting Association adopts this position in recommending the following procedure:

An outlay by a corporation for shares of its own stock should be treated as a reduction of paid-in capital up to the prorata amount represented by the acquired shares, whether or not such shares are re-issuable. If the outlay for the reacquired shares exceeds the prorata reduction of paid-in capital, the excess should be treated as a distribution of retained income. The reissue of acquired shares should be accounted for in the same manner as an original issue of corporate shares.<sup>1</sup>

When the acquisition of stock is viewed as a retirement of capital, two methods may be employed in reporting the reduction in the capital stock balance: (1) the capital stock account may be charged directly; (2) a treasury stock account may be charged and this balance treated as a subtraction item from capital stock. The two methods are illustrated on pages 624 and 625. The transactions in the two examples for each method are described on pages 623 and 626.

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<sup>1</sup>"Accounting Concepts and Standards Underlying Corporate Financial Statements," 1948 Revision (Urbana: American Accounting Association), pp. 6 and 7.

*Treasury Stock Reported as a Reduction in Capital Stock:*

*Example 1:* Transaction (1): Treasury stock is acquired for more than the original issuing price and Earned Surplus is charged for the excess paid, as was done in the case of formal stock retirement.

Transaction (2a): When the stock is resold at more than par, the difference is reported as a premium on stock sale.

Transaction (2b): When the stock is resold at less than par, the difference is not recognized as a discount on stock in view of the absence of any discount liability on the part of persons acquiring stock previously issued and paid for. Instead, the charge is made to Earned Surplus. Acquisition of the treasury stock for \$12,500 and its subsequent resale for \$9,000 resulted in cancellation of the original premium on the stock, \$1,000, and the further impairment of earned surplus by \$2,500. A charge to Earned Surplus for \$1,500 was recognized originally; \$1,000 is recognized on the resale. That a net reduction of \$2,500 is appropriate in the maintenance of capital at the legal balance, \$10,000, is demonstrated as follows:

Required legal capital as a result of original stock issuance . . . . .		\$10,000
Net receipts from stock transactions:		
Original sale . . . . .	\$11,000	
Resale . . . . .	9,000	
	<hr/>	
	\$20,000	
Less amount paid on stock reacquisition . . . . .	12,500	7,500
Required charge to surplus to secure the maintenance of capital at the legal or stated balance . . . . .		\$ 2,500

*Example 2:* Transaction (1): Treasury stock is acquired at less than original issuing price, and a paid-in surplus balance is credited for the amount of the original investment made by stockholders and retained by the corporation.

Transaction (2a): When the stock is resold at more than par, the difference gives rise to a premium on the stock sale.

Transaction (2b): When the stock is resold at less than par, the difference is charged against the paid-in surplus resulting from the original stock reacquisition; if this balance is inadequate, any excess is charged against earned surplus. In the example, the paid-in surplus arising from the acquisition of treasury stock at less than issuing price and its subsequent resale was \$2,000 minus \$1,500, or \$500; this balance is verified in the following summary:

Net receipts from stock transactions:	
Original sale . . . . .	\$11,000
Resale . . . . .	8,500
	<hr/>
	\$19,500
Less amount paid on stock reacquisition . . . . .	9,000
	<hr/>
	\$10,500
Amount reported as legal capital as a result of original stock issuance	10,000
	<hr/>
Paid-in surplus arising from treasury stock transactions . . . . .	\$ 500

*Treasury Stock Account Used to Report Reduction in Capital Stock:*

Instead of reducing the capital stock account directly when stock is reacquired, it is possible to debit the treasury stock account for the amount of the reduction. The treasury stock account subtracted from the capital stock account reporting the amount issued then gives the capital stock outstanding.

Transaction	First Approach: Treasury Stock Viewed as Capital Retirement	
	Treasury Stock Reported as Reduction in Capital Stock	
1952	Cash	110,000
Issue of stock, 10,000 shares, \$10 par, at 11.	Capital Stock	100,000
	Premium on Stock	10,000
Profit for year, \$30,000.	Profit and Loss	30,000
	Earned Surplus	30,000
1953 — EXAMPLE 1		
(1) Assuming reacquisition of 1,000 shares at 12½.	Capital Stock	10,000
	Premium on Stock	1,000
	Earned Surplus	1,500
	Cash	12,500
(2a) Assuming resale of stock at 13.	Cash	13,000
	Capital Stock	10,000
	Premium on Stock	3,000
(2b) Assuming resale of stock at 9.	Cash	9,000
	Earned Surplus	1,000
	Capital Stock	10,000
Capital section after sale of treasury stock:		
	(2a)	(2b)
	Capital Stock	\$100,000
	Premium on Stock	12,000
	Earned Surplus	28,500
		\$140,500
1953 EXAMPLE 2		
(1) Assuming reacquisition of 1,000 shares at 9.	Capital Stock	10,000
	Premium on Stock	1,000
	Cash	9,000
	Treasury Stock Surplus*	2,000
(2a) Assuming resale of stock at 10½.	Cash	10,500
	Capital Stock	10,000
	Premium on Stock	500
(2b) Assuming resale of stock at 8½.	Cash	8,500
	Treasury Stock Surplus	1,000
	Capital Stock	10,000
Capital section after sale of treasury stock:		
	(2a)	(2b)
	Capital Stock	\$100,000
	Premium on Stock	9,500
	Treasury Stock Surplus	2,000
	Earned Surplus	30,000
		\$141,500

\*The term "Treasury Stock Surplus" is used in the illustrations in the interest of account title brevity; a more descriptive title for this paid-in surplus balance would normally be desirable.

First Approach: Treasury Stock Viewed as Capital Retirement				Second Approach: Treasury Stock Viewed As Capital Element Awaiting Ultimate Disposition			
Treasury Stock Account Used to Report Reduction in Capital Stock							
Cash	110,000			Cash	110,000		
Capital Stock		100,000		Capital Stock		100,000	
Premium on Stock		10,000		Premium on Stock		10,000	
Profit and Loss	30,000			Profit and Loss	30,000		
Earned Surplus		30,000		Earned Surplus		30,000	
Treasury Stock	10,000			Treasury Stock	12,500		
Premium on Stock	1,000			Cash		12,500	
Earned Surplus	1,500						
Cash			12,500				
Cash	13,000			Cash	13,000		
Treasury Stock		10,000		Treasury Stock		12,500	
Premium on Stock		3,000		Treasury Stock Surplus		500	
Cash	9,000			Cash	9,000		
Earned Surplus	1,000			Premium on Stock	1,000		
Treasury Stock		10,000		Earned Surplus	2,500		
				Treasury Stock		12,500	
	(2a)	(2b)			(2a)	(2b)	
Capital Stock	\$100,000	\$100,000		Capital Stock	\$100,000	\$100,000	
Premium on Stock	12,000	9,000		Premium on Stock	10,000	9,000	
Earned Surplus	28,500	27,500		Treasury Stock Surplus	500		
				Earned Surplus	30,000	27,500	
	\$140,500	\$136,500			\$140,500	\$136,500	
Treasury Stock	10,000			Treasury Stock	9,000		
Premium on Stock	1,000			Cash		9,000	
Cash		9,000					
Treasury Stock Surplus		2,000		Cash	10,500		
Cash	10,500			Treasury Stock		9,000	
Treasury Stock		10,000		Treasury Stock Surplus		1,500	
Premium on Stock		500		Cash	8,500		
Cash	8,500			Premium on Stock	500		
Treasury Stock Surplus	1,500			Treasury Stock		9,000	
Treasury Stock		10,000			(2a)	(2b)	
	(2a)	(2b)		Capital Stock	\$100,000	\$100,000	
Capital Stock	\$100,000	\$100,000		Premium on Stock	10,000	9,500	
Premium on Stock	9,500	9,000		Treasury Stock Surplus	1,500		
Treasury Stock Surplus	2,000	500		Earned Surplus	30,000	30,000	
Earned Surplus	30,000	30,000			\$141,500	\$139,500	
	\$141,500	\$139,500					

When Treasury Stock is charged for stock reacquired, the sale of treasury stock requires credits to the latter account instead of to the capital stock account. Analysis of treasury stock transactions and the effects upon earned and paid-in surplus balances are exactly the same as described for the preceding method.

The second set of examples on pages 624 and 625 illustrates this method. Entries here should be compared with those that were made when treasury stock transactions were reported as changes in the capital stock balance.

**Second Approach: Treasury Stock Viewed as Capital Element Awaiting Ultimate Disposition.** The acquisition of treasury stock may be viewed as an application of cash to a capital purpose that has not been finally defined or consummated. Upon the purchase of treasury stock, a treasury stock account is charged for the cost of the purchase. This balance is recognized as a negative capital element that does not call for specific identification with capital stock, paid-in surplus, or earned surplus elements at this time. If treasury stock is retired, the debit balance in the treasury stock account can be allocated to the appropriate capital elements as in preceding analyses; if treasury stock is resold, the sale is viewed as achievement of the objective originally envisioned, now making possible the recognition of the net effect of treasury stock purchase and sale. It is the retirement or the sale of treasury stock that makes possible a determination of the effect of treasury stock transactions upon corporate capital elements.

The application of this approach is illustrated in the third example on pages 624 and 625. The transactions in the example are described below.

*Example 1:* Transaction (1): When treasury stock is purchased, it is recorded at its cost regardless of whether this cost is more or less than the original stock issuance price. In a presentation of corporate capital at this time, treasury stock, consisting of a cost unallocated as to the different capital elements, would have to be reported as a subtraction item from a total for capital stock, paid-in surplus, and earned surplus balances.

Transaction (2a): When treasury stock is sold at more than its cost, the difference gives rise to paid-in surplus from treasury stock transactions.

Transaction (2b): When treasury stock is sold at less than its cost, the shrinkage in corporate capital is first applied against any premium on the original sale of the stock; any balance is then applied against earned surplus. In the example, the charge of \$2,500 to Earned Surplus finds the same justification as described for this transaction in adopting the first approach; the charge to surplus secures the maintenance of capital at the legal or stated balance.

*Example 2:* Transaction (1): When treasury stock is acquired at less than its original issuing price, it is still recorded at cost.

Transaction (2a): The sale of the stock at more than cost gives rise to paid-in surplus as in Example 1 above.

Transaction (2b): If the stock is sold at less than cost, the difference is charged to the premium arising from the original sale of the stock; if the premium balance is inadequate, any excess is charged against Earned Surplus.

Capital balances arising from the use of each method should be compared. Capital sections after the sale of treasury stock are listed following each set of entries. While total capitals are the same regardless of the method used, there will be variations in earned and paid-in surplus totals. Each method can be supported in theory; the nature of the method to be used will depend upon the approach that one feels has the greater merit under the circumstances.

**ACQUISITION OF NO-PAR TREASURY STOCK**

The foregoing illustrations assumed the acquisition and the disposal of stock with a par value. The acquisition of stock with a stated value provides no new problems; the stated value instead of the par value is used when reductions in the capital stock account are involved or when the treasury stock account is charged with an amount equal to the original credit reflected in the capital stock balance. When there is no stated or par value and the capital stock account has been credited with the proceeds from stock issued at different prices, a special problem is faced. Under such circumstances, the capital stock offset is usually considered to be either (1) the original issuing price of the particular lot reacquired, or (2) the average price at which the stock of the company was originally issued. For example, assume the following entries in a capital stock account:

CAPITAL STOCK (NO-PAR)

2,000 shares @ 18	36,000
2,000 shares @ 20	40,000
1,000 shares @ 22	22,000
5,000 shares	98,000

Assume that 1,000 shares of stock are reacquired at 16½. The acquisition is identified as the second lot sold, and treasury stock is to be recorded at the original issuing price. The following entry is made:

Treasury Stock.....	20,000	
Cash.....		16,500
Treasury Stock Surplus.....		3,500

Assume that treasury stock is to be recorded at the average issuing price. The average is calculated as follows:

$$\frac{98,000 \text{ (proceeds from sales)}}{5,000 \text{ (shares issued)}} = \$19.60, \text{ average issuing price per share}$$

The entry in this case would be:

Treasury Stock.....	19,600	
Cash.....		16,500
Treasury Stock Surplus.....		3,100

**SURPLUS APPROPRIATIONS FOR TREASURY STOCK HOLDINGS**

The illustrations on pages 624 and 625 gave the entries for the acquisition and the sale of treasury stock but did not consider the problem of restricting the distribution of surplus during the period that the treasury stock was held. When the law provides for surplus restrictions upon the acquisition of treasury stock, it will be necessary to give effect to such restrictions regardless of the method employed in recording the treasury stock.

It will be observed that the surplus of the company in the example was adequate to permit the purchase of the treasury stock as indicated without reducing the capital below the legal value reflected in the capital stock account. To assure no impairment in legal capital after the treasury stock is acquired, either of the following procedures may be followed:

(1) A surplus appropriation may be made for the amount of surplus restricted as required by law. When the law provides for the cancellation of such a restriction upon the recovery of the price paid for the treasury stock or upon the formal retirement of the stock, the entries recording the sale or the retirement are accompanied by an entry reversing the surplus appropriation.

(2) A parenthetical remark may be included in the presentation of the corporate capital on the balance sheet to report the surplus restriction resulting from the treasury stock holdings; this remark relative to surplus must be stated on succeeding balance sheets until the stock is sold or formally retired and the restriction is no longer operative.

To illustrate the foregoing, assume the information listed under Second Approach Example 1 on page 625. With the purchase of treasury stock at \$12,500, a second entry may be made as follows.

Earned Surplus	12,500	
Reserve for Purchase of Treasury Stock		12,500

The capital of the company may be presented as follows:

Capital stock — authorized and issued, 10,000 shares, par value \$10, which includes 1,000 shares in the treasury (see below)		\$100,000	
Premium on stock			10,000
Earned surplus:			
Appropriated reserve for purchase of treasury stock	\$12,500		
Unappropriated	17,500		30,000
			<hr/>
			\$140,000
Less treasury stock, 1,000 shares at cost			12,500
			<hr/>
Total capital			\$127,500

Sale of the treasury stock would call for the following entry:

Reserve for Purchase of Treasury Stock .....	12,500
Earned Surplus.....	12,500

If the surplus reservation is to be reported by parenthetical remark, no entry is made and the capital may be presented as follows:

Capital stock — authorized and issued, 10,000 shares, par value \$10, which includes 1,000 shares in the treasury (see below) .....	\$100,000
Premium on stock .....	10,000
Earned surplus (of which \$12,500 cannot be used as a basis for dividends as a result of the purchase of treasury stock) ...	30,000
	<hr/>
	\$140,000
Less treasury stock, 1,000 shares at cost .....	12,500
Total capital.....	<hr/>
	\$127,500
	<hr/>

An alternate procedure such as the following may be used in developing the summary:

Capital stock — authorized and issued, 10,000 shares, par value \$10:	
Outstanding, 9,000 shares .....	\$ 90,000
Held in treasury, 1,000 shares (see below).....	10,000
	<hr/>
Total issued.....	\$100,000
Premium on stock .....	10,000
Earned surplus (See Note 1) .....	30,000
	<hr/>
	\$140,000
Less treasury stock, 1,000 shares at cost .....	12,500
	<hr/>
Total capital .....	\$127,500
	<hr/>

NOTE 1. Availability of surplus for dividends is limited to \$17,500, as a result of restrictions arising from company purchase of treasury stock at a cost of \$12,500.

## DONATIONS OF TREASURY STOCK

Treasury stock may be donated to the company so that it may be resold to provide working capital. Donations of stock with a par value are found where large blocks of stock were originally issued in exchange for properties. Such stock, which is considered fully paid, may be resold at any price in raising working capital without involving the purchaser in a possible liability to the creditors for the difference between par and a lower sales price. While such a donation may represent a sacrifice on the part of the contributors of the stock, ordinarily it simply represents a return of an overissue of stock for properties transferred. The issuance of an excess number of shares of stock for properties and the subsequent

donation of stock that may be sold without a discount liability has been referred to as the "treasury stock subterfuge."

Two methods, similar to those employed in the case of purchase of treasury stock, may be used in recording donations:

- (1) Treasury Stock may be debited on a basis consistent with credits to Capital Stock, and Donated Surplus, a paid-in surplus account, may be credited for an equal amount.
- (2) In the absence of any cost, the treasury stock acquisition may be reported by a memorandum entry, recognition of any surplus arising from the donation being deferred until the stock is sold.

To illustrate the above procedures, assume that the Lucky Mining Company is formed to take over the mining properties of Adams and Burke, and 5,000 shares of common, par \$25, are issued to each party in exchange for properties valued at \$250,000. Later Adams and Burke each donate 2,000 shares of stock to the corporation. This stock is subsequently resold at \$15 per share. Entries and the effects of transactions upon capital are shown below:

Transaction	(1) Assuming Treasury Stock Is Reported At Par		(2) Assuming Treasury Stock Is Reported At Cost	
	Mining Properties	Common Stock	Mining Properties	Common Stock
Issued stock in exchange for properties.	250,000	250,000	250,000	250,000
Received 4,000 shares as a donation.	Treasury Stock, Common Donated Surplus.	100,000 100,000	(Memo) Received 4,000 shares of common from stockholders as a donation.	
Capital section of balance sheet after donation of treasury stock:	Common Stock (par \$25, authorized and issued 10,000 shares) Less Treasury Stock (4,000 shares)  Outstanding (6,000 shares) Donated Surplus	\$250,000 100,000  150,000 100,000 250,000	Common Stock (par \$25, authorized and issued, 10,000 shares, less 4,000 shares of treasury stock reacquired by donation)	\$250,000 ==
Sold 4,000 shares of treasury stock at 15.	Cash Donated Surplus Treasury Stock, Common	60,000 40,000 100,000	Cash Donated Surplus	60,000 60,000
Capital section of balance sheet after sale of treasury stock:	Common Stock (par \$25, authorized and issued, 10,000 shares) Donated Surplus	\$250,000 60,000 310,000	Common Stock (par \$25, authorized and issued, 10,000 shares) Donated Surplus	\$250,000 60,000 310,000

Similar procedures are employed in recording the donation of no-par stock. When no-par stock is without a stated value and the first method is employed, treasury stock would be reported at its original issuing price or at an average price as in the case of treasury stock purchases.

The second method, recognition of the treasury stock acquisition by a memorandum entry, offers certain advantages over the first method and hence may be preferred:

- (1) Donated surplus is recognized only when the treasury stock is sold and the effect of the contribution upon capital is finally measurable. The donation of stock is viewed simply as effecting a reduction in the number of shares outstanding; sale of the stock produces an increase in capital thus confirming a donated surplus element and establishing its amount.
- (2) This method is the simpler one to apply. It avoids the need for entries in the accounts upon donation together with the calculations that may be required in establishing values for the donation that will stand only until the shares are sold and the actual contribution to corporate capital is known.

When assets are overvalued upon the original issuance of stock, the credit emerging from a resale of donated stock is more accurately treated as a reduction in the book value of assets than as an increase in corporate paid-in capital. For example, in the illustration just given, assuming that properties were overvalued in the entry recording the original exchange of stock for properties, the proceeds from the resale of the stock may be regarded as a fulfillment of the consideration involved in the original issue of stock. The receipt of properties and cash in exchange for stock of \$250,000, then, might be considered to produce the following:

Cash. ....	\$ 60,000	Capital Stock.....	\$250,000
Mining Properties.....	190,000		
	<u>\$250,000</u>		<u>\$250,000</u>
	<u>      </u>		<u>      </u>

This result is achieved by treating the ultimate proceeds from the treasury stock sale as a reduction in the asset book value. The Committee on Accounting Procedure of the American Institute of Accountants makes the following comment relative to stock donation:

If capital stock is issued nominally for the acquisition of property and it appears that at about the same time, and pursuant to a previous agreement or understanding, some portion of the stock so issued is donated to the corporation, it is not permissible to treat the par value

of the stock nominally issued for the property as the cost of that property. If stock so donated is subsequently sold, it is not permissible to treat the proceeds as a credit to surplus of the corporation.<sup>1</sup>

**STOCK RIGHTS  
AND STOCK  
PURCHASE OPTIONS**

Corporations may grant stockholders, officers, and employees special rights to subscribe to stock and options to purchase its stock. Such special grants generally arise under the following circumstances:

- (1) A company requiring additional capital may offer stockholders special rights to subscribe for stock.
- (2) A company may provide rights to subscribe to certain securities with the issue of various classes of securities.
- (3) A company may provide rights to subscribe to stock or options to purchase stock to promoters, officers, or employees as compensation or as a bonus for services or other contributions, past, present, or future.

Rights to subscribe to stock are evidenced by certificates called *warrants*. The rights enable their owners to purchase stock at a specified price; the period for exercise may or may not be limited. Such rights have a value because of the difference between the exercise price under the right as compared with a higher market value for the security, either present or potential.

The accounting problems that are faced by the issuing company under each of the conditions listed are described in the following paragraphs:

*Rights Granted to Stockholders as Means of Increasing Invested Capital.* Only a memorandum entry is required on the books of the corporation when rights are issued to stockholders. The memorandum entry should state the number of shares that may be claimed under outstanding rights. This information is required so that the corporation may reserve sufficient unissued stock to meet requirements through exercise of the rights. Upon surrender of the rights, stock is issued by the company at the price specified in the rights. The issue of stock acquired with rights calls for a memorandum entry to record the decrease in the number of rights outstanding and an entry to record the stock sale. The entry for the sale depends upon the amount paid for the shares:

- (1) When the cash received in the exercise of rights is less than the required credit to Capital Stock at the legal value, the difference

<sup>1</sup>*Accounting Research Bulletin No. 1*, "General Introduction and Rules Formerly Adopted," September, 1939 (New York: American Institute of Accountants), p. 6.

must be charged to Earned Surplus; exercise of rights under such conditions results in a permanent capitalization of surplus.

(2) When the amount paid is equal to the par or stated value of the stock, Cash is debited and Capital Stock is credited. This would also be the entry for the issue of no-par stock without a stated value.

(3) When the cash received exceeds the par or stated value of the stock, the excess is recorded as an increase in paid-in surplus.

Full information concerning outstanding rights should be reported on the balance sheet so that the effects of the exercise of future rights may be ascertained by those referring to the statements for information concerning corporate capital.

*Rights Issued with the Sale of Bonds or Stock.* When rights are issued with the sale of other securities, recognition of the rights in the entry to record the sale will depend upon whether a value can be related to these rights. When rights have no value on the date of sale, the full sales proceeds may be identified with the sale of the other securities. When the rights are exercised, the stock is recorded as described in the previous section; if the rights are not exercised and lapse, no entry is required since no value was originally assigned to the rights. When rights do have a market value upon issuance, the sales proceeds should be allocated between the rights and the other securities issued. When the rights are exercised, the stock is recorded at the sum of the value assigned to the rights and the amount paid upon their exercise; if the rights are not exercised and lapse, the value assigned to the rights should be transferred to a paid-in surplus balance. The sale of securities accompanied by rights is illustrated in the examples that follow:

(1) Assume that the Matson Co. issues 1,000 shares of preferred stock at par, \$50, and gives with this issue warrants enabling holders to subscribe to 1,000 shares of no-par common stock at \$25 per share during the following year. Common stock has a stated value of \$20 and sells at this time at \$22 per share. Since rights may be considered to have only minor speculative value at this time, the entry to record the sale of preferred and common rights is:

Cash	50,000	
Preferred Stock		50,000

In the succeeding year the value of common rises above \$25 per share and all of the rights are exercised. Sale of the stock upon exercise of the warrants is recorded as follows:

Cash	25,000	
Common Stock (stated value \$20)		20,000
Paid-In Surplus — From Sale of Common Stock		5,000

(2) Assume that the common stock is selling at \$28 per share when the preferred shares, together with warrants for the purchase of common, are sold. Under these circumstances, it is reasonable to assume that the \$50 sales price reflects payment for two assets, a common stock warrant worth \$3 and a share of preferred stock worth the balance, \$47. The following entry recognizes the sale of preferred stock in this manner:

Cash	.	50,000	
Discount on Preferred Stock	.	3,000	
Preferred Stock			50,000
Common Stock Warrants Outstanding			3,000

Subsequent exercise of all of the rights and issue of the common at \$25 is reported as follows:

Cash	25,000	
Common Stock Warrants Outstanding	3,000	
Common Stock (stated value \$20)		20,000
Paid-In Surplus — From Sale of Common Stock		8,000

Assume, however, that the market value of the common stock falls below \$25 per share and that the rights are not exercised. The entry that follows transfers the amount assigned to warrants to paid-in surplus:

Common Stock Warrants Outstanding	3,000	
Paid-In Surplus — From Receipts on Unexercised Rights		3,000

*Rights or Stock Options Issued as Compensation for Services.* The grant to promoters, officers, and other employees of options to purchase stock or rights to subscribe for stock raises the following questions: (1) What value is to be assigned to the stock issued in compensation for services? (2) What accounts are to be charged for such compensation?

The fair market value of the shares granted under an option may vary considerably over the period of the option. This creates the problem of determining a date that may be used to measure the cost of the compensation. The Committee on Accounting Procedure states that six dates may be considered for this purpose:<sup>1</sup>

- (1) The date of the adoption of an option plan.
- (2) The date on which an option is granted to a specific individual.
- (3) The date on which the grantee has performed any conditions precedent to exercise of the option.
- (4) The date on which the grantee may first exercise the option.

<sup>1</sup>*Accounting Research Bulletin No. 37 (Revised)*, "Accounting for Compensation Involved in Stock Option and Stock Purchase Plans," January, 1953 (New York: American Institute of Accountants), p. 285-A.

- (5) The date on which the option is exercised by the grantee.
- (6) The date on which the grantee disposes of the stock acquired.

The Committee, in reviewing each of these dates, concludes that it is the date on which the option is granted to a specific individual, (2) above, that provides the point at which to measure the compensation cost and hence to arrive at the valuation to be applied to the option agreement. This is the date on which the company acknowledges the claim; this is the date when the company takes action that makes impossible any alternate use of the shares placed in option. Dates prior to this time are not pertinent since plans call for the rendering of services and their formal recognition before any liability becomes effective; plans thus are no more than proposed courses of action. Dates after this time are not pertinent; changes in the values of the compensation award after its accrual are beyond the scope of the plan for compensation and represent matters of concern only to the grantee. Using the date on which the stock option is effectively granted, the value of the rights is calculated as the excess of the fair market value of the stock over the price that must be paid by the grantee in its acquisition.

While the value of the stock option is set at the date it is granted, the option may represent payment for services over an extended period. In accounting for the option, the period covered by the compensation — whether past, present, or future — must be considered and charges must be assigned in an appropriate manner. For example, if options are granted in recognition of services contributing to the revenues of past periods and there has been no recognition given in the past to the accrual of compensation, an extraordinary charge to profits of prior periods should be recognized or Earned Surplus should be debited; if options are related to services performed currently, the charge is made to current expense; in those instances where options can be considered to result in current and future benefits, the charge for options may be recorded as a deferred charge to be assigned to the benefiting periods. When options represent payment for services that should be capitalized, charges are made to the appropriate tangible or intangible asset account.

Upon exercise of stock options, the sum of the cash received and the value previously assigned to such options represents the consideration identified with the issuance of the stock.

Accounting for stock options to employees is illustrated in the example that follows: On January 12, 1953, the board of directors of the Miller Co. authorizes the issuance of stock options to certain

officers who have been with the company for a ten-year period. The options enable officers to subscribe to a total of 10,000 shares of stock during the next three years at a price of 15. Stock has a par value of \$10 and is selling on the market currently at 22½. Options are exercised in 1954.

The value of the stock options at the date of the grant is calculated as follows:

Market value of common on January 12, 10,000 shares at 22½	\$225,000
Option price, 10,000 shares at 15	150,000
Value of stock options	<u>\$ 75,000</u>

The following entries are made to record (1) the grant of the options in recognition of past services and (2) the exercise of the options by officers:

(1) Compensation Chargeable to Profits of Prior Periods (or Earned Surplus)	75,000	
Common Stock Options Outstanding		75,000
(2) Cash	150,000	
Common Stock Options Outstanding	75,000	
Common Stock		100,000
Premium on Common Stock		125,000

While option plans are operative, the company balance sheet should reflect full information concerning the number of shares under option, the option price, the number of shares exercised, and the number of shares still exercisable.

It should be mentioned that, for income tax purposes, when the option price is less than the market price, the grantee of stock options may be taxed for income as of the date the options are exercised; income to the grantee is measured by the difference between the fair market value of the stock acquired and the amount paid for the stock.

The standards and procedures that have been described with respect to stock options offered in compensation for services are equally applicable to those instances in which capital stock of a company is given to an employee. The value of the stock compensation should be established as of the date that the asset is granted to the employee; the charge for compensation should be related to the periods covered by the compensation.

**STOCK CONVERSION** Stock contracts frequently permit stockholders to exchange their holdings for stock of other classes. In certain instances, the exchanges may affect only

the capital stock balances on the books of the corporation; in other instances the exchanges may affect both capital stock and surplus.

To illustrate the different conditions, assume that the capital of the Washington Corporation on December 31, 1953, is as follows:

Preferred Stock, 10,000 shares, \$100 par	\$1,000,000
Premium on Preferred Stock	100,000
Common Stock, 100,000 shares, \$25 stated value	2,500,000
Paid-In Surplus      From Sale of Common Stock	500,000
Earned Surplus	1,000,000
	<hr/>
Total Capital	\$5,100,000
	<hr/>

Preferred shares are convertible into common shares at any time at the option of the shareholder.

*Case 1:* Assume that conditions of conversion call for the exchange of each share of preferred for 4 shares of common. On December 31, 1953, 1,000 shares of preferred stock are exchanged on the above basis. The amount originally paid for the preferred, \$110,000 (1,000 shares at \$110 as indicated by the preferred stock and premium balances) now becomes the consideration identified with 4,000 shares of common stock with a total stated value of \$100,000. The conversion is recorded as follows:

Preferred Stock (1,000 shares)	100,000	
Premium on Preferred Stock	10,000	
Common Stock (4,000 shares)		100,000
Paid-In Surplus      - From Sale of Common Stock		10,000

*Case 2:* Assume that conditions of conversion call for the exchange of each share of preferred for 3 shares of common. The conversion of 1,000 shares of preferred stock for common stock calls for the transfer of the preferred stock book value to the common stock; the excess of the book value of preferred holdings over the stated value of the common stock issued in exchange is recognized as paid-in surplus relating to the latter issue. The conversion is recorded by the following entry:

Preferred Stock (1,000 shares)	100,000	
Premium on Preferred Stock	10,000	
Common Stock (3,000 shares)		75,000
Paid-In Surplus      - From Sale of Common Stock		35,000

*Case 3:* Assume that conditions of conversion call for the exchange of each share of preferred for 5 shares of common. Here, an increase in common stock of \$125,000 (5,000 shares, stated value per share \$25) must be recognized although it is accompanied by a decrease in the preferred stock paid-in capital of only \$110,000; the difference in capi-

talization can be accomplished only by a charge to Earned Surplus. The conversion, then, is recorded as follows:

Preferred Stock.....	100,000	
Premium on Preferred Stock.....	10,000	
Earned Surplus.....	15,000	
Common Stock (5,000 shares).....		125,000

The problems relating to the conversion of bonds for capital stock were previously described in Chapter 19. When either stocks or bonds have conversion rights, unissued securities of the class required to meet these rights must be reserved by the corporation in an amount equal to the conversion privileges. Detailed reference should be made on the balance sheet to security conversion features as well as to the security reservations that have been made to meet conversion requirements.

**RECAPITALIZATION** Corporate recapitalization occurs when an entire issue of stock is changed by action of the corporation. Such action ordinarily requires approval by the proper state authorities, although some states permit reduction of legal capital by action of the board of directors and the stockholders without reference to state authorities.

A common type of recapitalization is a change from par to no-par stock. If the capital stock balance is to remain the same after the change, the original capital stock account is closed and a new account summarizing the new issue is opened. Any premium relating to the original par-value stock should be transferred to some other paid-in surplus account appropriately labeled. If the capital stock balance is to exceed the consideration received on the original sale of the stock, a new capital stock account is credited for the value assigned to the issue, original paid-in capital balances are closed, and Earned Surplus is charged for any difference. If the capital stock balance is to be reduced, the original account, as well as any premium account, is closed, a new capital stock account is credited for the value assigned to the new stock, and an appropriately titled surplus account is credited for the difference. The latter balance, frequently termed "Surplus from Recapitalization" or "Reduction Surplus," is part of the corporate paid-in surplus, since it has its origin in the investment made by owners.

To illustrate the foregoing, assume the capital of the Signal Corporation to be as follows:

Capital Stock, 100,000 shares outstanding, par \$10 .....	\$1,000,000
Premium on Stock.....	100,000
Earned Surplus.....	250,000

\$1,350,000

Entries for each of the three possibilities are given below:

*Case 1:* Assume that the original stock is exchanged for no-par stock with a stated value of \$10:

Capital Stock (100,000 shares, par \$10)	1,000,000	
Premium on Stock	100,000	
Capital Stock (100,000 shares, stated value \$10)		1,000,000
Paid-In Surplus — From Sale of Stock		100,000

*Case 2:* Assume that the original stock is exchanged for no-par stock with a stated value of \$12.50:

Capital Stock (100,000 shares, par \$10)	1,000,000	
Premium on Stock	100,000	
Earned Surplus	150,000	
Capital Stock (100,000 shares, stated value \$12.50)		1,250,000

*Case 3:* Assume that the original stock is exchanged for no-par stock with a stated value of \$5:

Capital Stock (100,000 shares, par \$10)	1,000,000	
Premium on Stock	100,000	
Capital Stock (100,000 shares, stated value \$5)		500,000
Surplus from Recapitalization		600,000

Recapitalizations that involve revisions in the stated values of no-par shares or changes from no-par to a par value call for similar procedures.

Corporate recapitalization that is part of a plan for the elimination of a deficit and possibly the devaluation of assets is referred to as a *corporate readjustment* or *quasi-reorganization*. The procedures involved in achieving a fresh start by such corporate readjustments were considered in Chapter 17.

### STOCK SPLIT-UPS

When the market price for a share of stock is high and it is felt that a lower price will result in a better market and a wider distribution of holdings, the corporation may authorize that the number of shares outstanding be exchanged for a greater number of shares. For example, 100,000 shares of stock, par value per share \$100, are called in and exchanged for 500,000 shares of stock, par value \$20. Each shareholder here receives 5 new shares for each share owned. The increase in shares outstanding in this manner is known as a *split-up*. The reverse procedure, the exchange of the capital stock outstanding for a reduced number of shares, may be desirable when the price of stock is low and it is felt that there

will be certain advantages in having a higher price for shares as well as a smaller number of shares outstanding. The reduction of shares outstanding by combining shares is referred to as a *split-down* or *reverse-split*.

After a split-up or a split-down, the capital stock balance remains the same; however, the change in the number of shares of stock outstanding is accompanied by a change in the par or stated value of the stock. The change in the number of shares outstanding, as well as the change in the par or stated value, may be recorded by means of a memorandum entry. However, it would normally be desirable to make an entry transferring the capital stock balance to a new account that reports the full details concerning the nature and the amount of the new issue. In any event, entries will be required in the subsidiary stockholders ledger to report the exchange of stock and the change in the number of shares held by each stockholder.

## QUESTIONS

1. The controller for the Scott Co. contends that the redemption of preferred stock at less than its issuance price should be reported as an increase in earned surplus, since redemption at more than issuance price calls for a charge to earned surplus. How would you answer this argument?
2. What is the purpose of legislation limiting the reacquisition of a company's own stock to its surplus balance?
3. The laws of a certain state provide that a company "may purchase . . . shares issued by it . . . out of earned surplus." What criticism can you offer of this expression from an accounting point of view? What changes in the statement would you suggest?
4. Distinguish between treasury stock and unissued stock.
5. The Waters Co. reports treasury stock as a current asset, explaining that it plans to sell the stock soon to acquire working capital. Do you approve of this reporting under the circumstances?
6. In auditing the accounts of the Wooster Co. you find an entry for the payment of dividends on the total shares issued, including treasury stock reacquired, and a second entry recognizing the receipt of dividends on the treasury stock. Would you accept this practice? Give reasons.
7. (a) Describe two views that may be taken with respect to accounting for the reacquisition of treasury stock. (b) What are the entries in each case assuming (1) that stock is reacquired at more than the original issuing price, and (2) that stock is reacquired at less than the issuing price?
8. Earnings of the Saunders Co. equal to the amount paid on the reacquisition of treasury stock cannot be used as a basis for dividends until

treasury stock is disposed of or formally retired. What two procedures may be followed by the company in giving effect to this requirement for reporting purposes?

9. Explain the "treasury stock subterfuge." What is the effect of this practice on the balance sheet?

10. (a) Describe two methods that may be employed in recording the acquisition of treasury stock through donation by stockholders. (b) Which method do you consider preferable? Why?

11. The Miller Corporation, with authorized capital stock of 50,000 shares, \$100 par value, issues 40,000 shares at par. Later a stockholder donates 5,000 shares to the corporation. A balance sheet issued by the corporation soon after this shows:

Capital stock . . . . .	\$5,000,000
Less: Treasury stock . . . . .	1,500,000
	<hr/>
Stock outstanding . . . . .	\$3,500,000
Earned surplus . . . . .	500,000
	<hr/>
Net worth . . . . .	\$4,000,000

Is this a satisfactory statement? Explain.

12. (a) Define a stock option. (b) What are the circumstances that may suggest the issue of stock options?

13. (a) What entries should be made on the books when stock rights are issued to stockholders? (b) What entries should be made when stock is issued on rights? (c) What information, if any, should appear on the balance sheet relative to outstanding rights?

14. What special accounting problem arises upon the sale of securities accompanied by rights to subscribe to other issues?

15. (a) What date should be used for purposes of establishing the value of a stock option and recording it on the books of the issuing corporation? Give reasons for your conclusion. (b) What entries are made upon (1) the issue of such an option and (2) the exercise of such an option?

16. How would you recommend that stock options outstanding be reported on the corporation balance sheet?

17. (a) Define a stock split. (b) What are the reasons for effecting a stock split?

18. The board of directors of the Parks Co. agrees to the issuance of 1,000 shares of common stock to five retiring officers who have been with the company for a ten-year period. How would you recommend that this action be recorded in the accounts?

## EXERCISES

1. The Westmore Co. has 10,000 shares of preferred stock and 50,000 shares of common stock, each having been issued at par of \$100. On June 1, 1953, the company purchased 1,500 shares of preferred stock at  $101\frac{1}{2}$  and formally retired them; on September 15, 1953, the company purchased 1,000 additional shares at 97 and retired them. Give the entries to record the acquisition and the retirement of the preferred shares.

2. James, Inc. issued \$500,000 of 5% preferred stock, par \$100, on January 1, 1952, at 102 with a sinking fund provision requiring that there shall be redeemed each year an amount of stock equal to 20% of the profits of the preceding year. During 1952 James, Inc. made a profit of \$160,000, and on January 2, 1953, created the fund referred to above. On February 3, 1953, it purchased and retired 300 shares of the preferred stock at 104. Give entries for (a) issuance of stock, (b) establishment of the fund, and (c) purchase and retirement of the stock.

3. The capital accounts for the Platt Manufacturing Co. show the following balances on June 1, 1953:

Capital Stock, 100,000 shares, par \$10	.....	\$1,000,000
Paid-In Surplus — From Sale of Stock at 12	.....	200,000
Earned Surplus	.....	500,000
		\$1,700,000

On this date the company reacquires 5,000 shares of stock at 11; and in December of the same year it resells this stock at  $14\frac{1}{2}$ . (a) What entries are made for the stock acquisition and the resale if the purchase is viewed as a capital retirement with treasury stock being reported at par? (b) What entries are made for the stock acquisition and the resale if the purchase is viewed as giving rise to a capital element awaiting ultimate disposition and treasury stock is reported at cost?

4. What are the entries for (a) and (b) in Exercise 3 for the purchase and the resale of the stock at the amounts indicated, assuming the original corporate capital was stated as follows:

Capital Stock, 100,000 shares, no par, sold at 12	.....	\$1,200,000
Earned Surplus	.....	500,000
		\$1,700,000

5. Assume in Exercise 3 that laws of the state of incorporation for the Platt Manufacturing Co. restrict dividends to the balance of earned surplus less the cost of any treasury stock during the period of such holdings; this restriction on earned surplus is removed upon the resale of treasury stock. If the restriction is to be reported in the accounts, what entries would be made on the date of stock reacquisition and on the date of its resale?

6. The Healey Corporation shows the following capital balances: Capital Stock Issued, \$200,000; Premium on Capital Stock Issued, \$10,000; and Earned Surplus, \$50,000. It purchases 3,000 shares of its \$10 par-value stock at  $10\frac{1}{2}$ , recording the acquisition at cost. Earned surplus equal to the purchase price is appropriated so that it will not be used as a basis for dividends during the period of treasury stock ownership in conformance with state laws. Subsequently 2,000 shares of treasury stock are sold at 12 and an adjustment is made in the surplus appropriation. (a) What entries are required to record the above transactions? (b) Prepare the capital section of the balance sheet (1) after acquisition of the treasury stock and (2) after resale of the treasury stock.

7. Stock outstanding of the Webb Co. is no-par with a stated value of \$20. On December 1, a principal stockholder donates 1,000 shares of stock to the corporation. The stock is subsequently sold at 24. Record the acquisition and the resale of the treasury stock according to two different methods that might be used. (Assume that corporation assets are properly valued.)

8. The Werner Co. issued 100,000 shares of common stock, par \$10, to three partners in exchange for certain undeveloped properties. The properties were recorded at \$1,000,000. Immediately thereafter, the partners donated to the corporation 25% of the shares acquired to enable the company to raise working capital through the sale of these shares. The stock was resold at \$7. What entries would you make in recording the stock donation and its resale?

9. The Crowell Corp. issues \$1,000,000 of 5% bonds at 102. With each subscription for a \$1,000 bond it gives transferable warrants permitting the owner to subscribe to 5 shares of common stock at par value, \$50, for a one-year period. (a) What entry should be made by the company for the sale of the bonds assuming that: (1) stock is selling at \$45 per share on the date of the bond issue; and (2) stock is selling at \$60 per share on the date of the bond issue. (b) What entries would be made in (1) and (2) above, assuming that all of the rights are ultimately exercised? (c) What entries would be made in (1) and (2) above, assuming that only 80% of the rights are ultimately exercised?

10. The capital for the Baxter Co. on December 31 is as follows:

Preferred Stock, 10,000 shares issued and outstanding, par \$50.....	\$ 500,000
Premium on Preferred Stock — From issue at 55 . . . . .	50,000
Common Stock, 100,000 shares issued and outstanding, par \$10.....	1,000,000
Premium on Common Stock — From issue in excess of par . . . . .	126,000
Retained Earnings. . . . .	1,600,000
	<hr/>
	<u>\$3,276,000</u>

Preferred stock is convertible into common stock. Give the entry that is made on the corporation books assuming that 1,000 shares of preferred are converted under each assumption listed:

- (a) Preferred shares are convertible into common on a share-for-share basis.
- (b) Each preferred share is convertible into  $7\frac{1}{2}$  shares of common.
- (c) Each preferred share is convertible into 4 shares of common.

11. The Burgess Corporation, in order to remove an operating deficit of \$35,000, issues 10 shares of no-par-value common stock with a stated value of \$5 a share in exchange for each original share of \$100 par-value common stock. What entries should be made to record the exchange and the retirement of 1,000 shares of the old stock and to eliminate the deficit?

12. The Matson Co. has 10,000 shares of common stock outstanding, each share having a par value of \$10. Proceeds from the sale of the stock were \$120,000 and this is reflected in the paid-in capital balances. What entry would be made on the company books for each assumption listed below:

- (a) A stock split is effected, each shareholder receiving 4 shares of new stock, par \$2.50, for each share owned.
- (b) A recapitalization is effected, each stockholder receiving 2 shares of new no-par stock with a stated value of \$5 for each share owned.
- (c) A recapitalization is effected, each shareholder receiving 1 share of new \$5 par stock for each share owned.
- (d) A recapitalization is effected, each shareholder receiving 3 shares of new \$5 par stock for each share owned.

## PROBLEMS

21-1. The capital stock account for the Meter Sales Co. at the beginning of 1953 shows the following issues of capital stock:

20,000 shares at \$12.00 .....	\$240,000
6,000 shares at \$12.50 .....	75,000
4,000 shares at \$13.50 .....	54,000
	\$369,000

During 1953 the company reacquires 1,500 shares at \$11.50, and these shares are resold at the beginning of 1954 at \$14 per share.

*Instructions:* (1) Give the entries to record the acquisition and the resale of treasury stock for each assumption listed below if the treasury stock purchase is viewed as capital retirement and the treasury stock account is charged at par, stated value, or average, whichever is appropriate.

- (a) Assume that the stock has a \$10 par.
- (b) Assume that the stock is no-par with a stated value of \$12.
- (c) Assume that the stock is no-par and without a stated value.

(2) Give the entries to record the acquisition and the resale of treasury stock for each assumption listed in (1) above if the treasury stock purchase is viewed as a capital element awaiting ultimate disposition and the treasury stock account is charged for the amount paid.

**21-2.** The Meadows Corporation is organized October 1, 1951. It is authorized to issue the following stock:

10,000 shares of 6% cumulative, nonparticipating preferred, \$100 par.  
200,000 shares of common, \$10 par.

On October 1, 8,000 shares of the preferred stock are subscribed for at 108. On October 4, 170,000 shares of common stock are subscribed for at 12¼. Subscriptions on both common and preferred stock are payable 25% upon subscription, the balance in three equal installments due December 1, 1951, and February 1 and April 1, 1952. Defaults on the installment due December 1 are as follows: preferred, 100 shares; common, 800 shares. Subscriptions are received for defaulted stock as follows: preferred at 104; common at 10. Subscriptions on stock that is resold are payable 50% upon subscription, the balance in two equal installments due February 1 and April 1, 1952. Amounts paid in minus losses on the stock resales are returned to defaulting subscribers. The net loss from operations by the corporation for the 3-month period ended December 31, 1951, is \$65,000.

In February, 1952, the remaining common stock is sold for cash at 11½. Cash is received in payment of remaining installments from all subscribers with the exception of one subscriber who is unable to pay his final 25% installment on the preferred. He issues to the corporation a note payable in January, 1953, for \$13,500, the fourth installment owed. Stock is to be issued upon payment of the note. Stock is issued in April to all fully paid subscribers. The net loss from operations by the corporation for the year ended December 31, 1952, is \$95,000.

On January 5, 1953, cash is received in payment of the note for \$13,500, and stock is issued. In January, the stockholders agree to the following: each share of common stock is to be exchanged for 2 shares of no-par common with a stated value per share of \$4. The surplus created by the recapitalization is to be used in part to cancel the deficit arising from operations of past periods. The exchange is completed in February. The net income after taxes for the year ended December 31, 1953, is \$175,000. On December 31 dividends are declared on preferred stock for the past 2¼ years, and a dividend of 10 cents a share is declared on the common stock.

*Instructions:* (1) Prepare journal entries for the transactions given above for the Meadows Corporation. (For annual profit or loss, simply give the entry to close the profit and loss account to the appropriate capital account.)

(2) Construct the capital sections for the corporation balance sheets as of (a) December 31, 1951, (b) December 31, 1952, and (c) December 31, 1953.

**21-3.** The balance sheet for the Bench Corporation on December 31, 1952, is as follows:

Assets . . . . . \$360,500	Liabilities . . . . . \$100,000
	Capital:
	\$1.50 Convertible preferred stock (\$25 par) . . . . . \$ 60,000
	Common stock (\$10 par) . . . . . 100,000
	Premium from original sale of common at 12½% . . . . . 25,000
	Earned surplus . . . . . 80,000
	\$265,000
	Less: Treasury stock, common, 500 shares at cost . . . . . 4,500
	260,500
Total assets . . . . . \$360,500	Total liabilities and capital . . . . . \$360,500

During 1953 the following transactions were completed in the order given:

- (a) 1,000 shares of common stock were reacquired by purchase at  $9\frac{3}{4}$ . (Treasury stock is recorded at cost.)
- (b) 200 shares of common stock were reacquired in payment of an account receivable of \$2,000.
- (c) Semiannual cash dividends of 50 cents on common stock and 75 cents on preferred stock were declared and paid.
- (d) Each share of preferred stock is convertible into 3 shares of common stock; 400 shares of preferred stock were turned in for common stock; accrued dividends totaling \$120 were paid to preferred stockholders exchanging their holdings.
- (e) All of the common treasury stock on hand was sold at  $11\frac{1}{2}$ .
- (f) 2,500 shares of common stock were issued in exchange for unimproved property appraised at \$30,000.
- (g) Semiannual cash dividends of 50 cents on common stock and 75 cents on preferred stock were declared and paid.

**Instructions:** (1) Give journal entries to record the transactions listed above.

(2) Prepare a balance sheet as of December 31, 1953, assuming that, in addition to the transactions listed, normal operations for the year resulted in a profit of \$16,000, and total liabilities at the end of the year remain unchanged at \$100,000.

**21-4.** Renshaw, Inc. was organized on January 2, 1951, and was authorized to issue 60,000 shares of no-par stock. Stock was sold during 1951 as follows, a stated value of \$10 being assigned by the board of directors to each share:

January 14 . . . . .	25,000 shares at 30
February 19 . . . . .	20,000 shares at 35
April 14 . . . . .	5,000 shares at 40

The corporation paid regular quarterly dividends of 50 cents a share, the first quarterly dividend payable to stockholders of record March 15 and the remaining dividends at 3-month intervals thereafter during 1951. Dividends are paid on record date. Earnings for the year were \$340,000.

In 1952 the market price of its stock declined and the company re-acquired its own stock as follows (treasury stock is recorded at cost):

April 12 . . . . .	2,000 shares at 32½
May 10 . . . . .	1,000 shares at 28
June 20 . . . . .	4,000 shares at 24

The laws of the state provide that earned surplus must be reduced by an amount equal to the purchase price of treasury stock. The appropriation of earned surplus is canceled when treasury stock is resold and original invested capital restored.

In 1952 the company paid the first and second regular quarterly dividends of 50 cents to stockholders of record March 15 and June 15. For the year the company incurred an operating loss of \$3,000.

In 1953 business conditions improved and the company, in order to obtain funds for expansion purposes, resold the 4,000 shares of treasury stock acquired June 20, 1952, as follows:

February 5 . . . . .	3,000 shares at 32
June 1 . . . . .	1,000 shares at 36

During 1953 the corporation paid regular dividends of 40 cents a share to stockholders of record March 15 and at quarterly intervals thereafter. A 50-cent extra dividend was paid on December 15. The net income for the year was \$180,000.

*Instructions:* (1) Prepare journal entries to record the above transactions. (For annual profit or loss figures, simply give the entry to close the profit and loss account to the appropriate capital account.)

(2) Construct the capital section of the balance sheet for the corporation as of December 31, 1951, December 31, 1952, and December 31, 1953.

**21-5.** The Worthington Plastic Co. showed a capital balance on December 31, 1951, as follows:

Capital stock, \$25 par; 250,000 shares authorized; 100,000 shares issued and outstanding; options to purchase 10,000 shares at \$30 per share are held by officers . . .	\$2,500,000
Premium on stock . . . . .	500,000
Earned surplus . . . . .	1,850,000
	<hr/>
	\$4,850,000

On May 31, 1952, the company issued bonds of \$1,000,000 at par, giving with each \$1,000 bond a warrant enabling the holder to obtain 5 shares of stock at \$50 for a one-year period. Shares were being sold for  $47\frac{1}{2}$  at this time.

By December 31, 1952, 4,000 shares of stock were issued to officers in connection with option agreements and 2,000 shares were issued in connection with rights issued on the sale of bonds. Earnings of the company for 1952 transferred to earned surplus were \$280,000.

On January 5, 1953, the corporation issued rights to shareholders (1 right to each share) permitting holders to acquire for a 60-day period 1 share at \$52 with every 8 rights submitted. Shares were being sold for \$57 at this time. All but 4,000 rights were exercised and the stock was issued.

By December 31, 1953, 1,500 shares of stock were issued to officers in connection with option agreements and 2,500 shares were issued in connection with rights issued on the sale of bonds. Earnings of the company for 1953 transferred to earned surplus were \$305,000. A special dividend of \$2.50 per share was declared on December 31.

*Instructions:* (1) Give entries to record all of the foregoing transactions affecting corporate capital.

(2) Prepare the capital section as it would appear on the company balance sheet on (a) December 31, 1952, and (b) December 31, 1953.

**21-6.** The trial balance of Walker & Co., Inc., before the closing of its second year on June 30, 1953, is given on the following page. Additional data are given on this and the following pages.

*Additional data:*

- (1) The \$500,000 of capital stock had been issued at a 10% premium to the vendors of the property on June 30, 1951, the date on which the company was organized. Stock in the amount of \$60,000 par was donated by the vendors and was recorded by a debit of that amount to Treasury Stock and a credit to Stock Donation. It was donated because land and buildings had not been valued accurately when entered on the books and the proceeds were to be considered as an allowance on the purchase price of land and buildings in proportion to their values as first recorded. The stock was sold in the latter part of 1951 for \$25,000, which amount was credited to Treasury Stock.
- (2) On June 30, 1953, a machine that cost \$6,000 when the business was started was removed and replaced by a similar machine costing \$10,000, which amount was charged to Operating Expenses, Repairs, etc. The replaced machine had been depreciated at  $7\frac{1}{2}\%$  during the first year. The only entry made was one crediting Machinery and Equipment with its sales price of \$1,500.
- (3) Depreciation of buildings is to be provided at 2% annually and of machinery and equipment at  $7\frac{1}{2}\%$ .

## WALKER &amp; CO., INC.

## TRIAL BALANCE

JUNE 30, 1953

	DR.	CR.
Cash .....	\$ 52,475	
Accounts receivable .....	320,000	
Allowance for bad debts .....		\$ 650
Materials and goods in process June 30, 1952 .....	65,000	
Finished goods — June 30, 1952 .....	158,000	
Insurance unexpired — June 30, 1952 .....	3,000	
Land .....	200,000	
Buildings .....	300,000	
Allowance for depreciation of buildings .....		6,000
Machinery and equipment .....	148,500	
Allowance for depreciation of machinery and equipment .....		11,250
Sinking fund trustee .....	25,000	
Discount on bonds .....	25,000	
Treasury stock .....	35,000	
Accounts payable .....		40,000
Bond interest accrued .....		3,125
Taxes accrued .....		9,000
First mortgage 5% sinking fund bonds .....		226,250
Capital stock .....		500,000
Premium on capital stock .....		50,000
Stock donation .....		60,000
Reserve for replacements .....		15,000
Reserve for bond sinking fund .....		25,000
Surplus — June 30, 1952 .....		60,000
Sales, less returns and allowances .....		915,000
Purchases of materials .....	305,000	
Labor .....	132,800	
Operating expenses, repairs, etc. ....	121,500	
General expenses .....	17,500	
Bond interest .....	12,500	
	\$1,921,275	\$1,921,275

- (4) The inventories at June 30, 1953, were as follows:

Materials .....	\$ 52,000
Goods in process, cost .....	105,000
Finished goods, cost .....	137,000

- (5) The company decided to maintain an allowance for bad debts equal to 1% of the accounts receivable outstanding on June 30. Accordingly, \$3,000 had been set aside at June 30, 1952, against which the bad debts of the year ended June 30, 1953, had been written off.
- (6) Three years' insurance is carried on buildings, machinery, and equipment, and a premium of \$4,500 had been paid on July 1, 1951.

- (7) The first mortgage 5% sinking fund bonds mature in 10 years from July 1, 1951, with interest payable on April 1 and October 1. They were sold on July 1, 1951, at 90, and the discount is to be written off over the life of the bonds on the straight-line basis.
- (8) A sinking fund and a sinking fund reserve are built up on the straight-line basis with a provision that installments after the first year shall be decreased by the amount of the annual 5% interest accretion to the fund, which interest is to be added both to the fund and to the reserve.
- (9) It is learned from the records that the proper installment to the sinking fund was paid by the company on June 30, 1953, but that the amount was charged in error to the first mortgage 5% bond account.
- (10) The sinking fund trustee reports that he added \$1,250 interest to the fund on June 30, 1953. This had not been recorded by the company.
- (11) During the year ended June 30, 1953, taxes were charged at \$3,000 monthly to Operating Expenses, Repairs, etc., and Taxes Accrued was credited. The taxes paid during the year amounted to \$27,000. The taxes are assessed each time for the year ended March 31.
- (12) A dividend of 10% on the outstanding stock was declared June 25, payable July 15, 1953.

*Instructions:* (1) Prepare a columnar work sheet showing in separate columns the adjustments applied to the trial balance and the resulting adjusted balances, the latter segregated into balance sheet and profit and loss columns.

(2) Prepare a balance sheet and an income statement for the year ended June 30, 1953. (A.I.A. adapted)

**21-7.** On December 31, 1953, the general ledger balances of the Amberley Company are as follows:

Dr.		Cr.	
Cash . . . . .	\$ 500	Accounts payable . . .	\$ 11,000
National City Bank. . . . .	10,000	Notes payable . . . . .	20,000
Accounts receivable. . . . .	15,500	Mortgage payable . . .	25,000
Supplies . . . . .	30,000	Preferred stock . . . . .	25,000
Land . . . . .	20,000	Common stock . . . . .	50,000
Buildings - cost . . . . .	40,000	Surplus . . . . .	25,000
Equipment - cost . . . . .	60,000	Buildings — allow-	
Goodwill . . . . .	10,000	ance for deprecia-	
		tion . . . . .	5,000
		Equipment — allow-	
		ance for deprecia-	
		tion . . . . .	25,000
	\$186,000		\$186,000

The common stock of the company (1,000 shares, stated and paid-in value per share \$50) is owned by C. M. Dale and A. V. Dale (500 shares each). The preferred stock (250 shares, par \$100) is owned as follows: S. S. Dale, 100 shares; W. A. Jones, 100 shares; C. C. Fletcher, 25 shares;

B. L. Sweet, 25 shares. This stock is a \$6 cumulative issue, and dividends have been declared and paid in full. The mortgage carries a rate of 5% and is held by S. S. Dale. Interest has been paid in full to date. The company notes represent a seasonal borrowing at National City Bank, made December 31, 1952.

Influenced particularly by the high level of corporate taxes, the directors of the company have for some time been giving consideration to the possibility of dissolving the corporation and continuing in business as a partnership. As of January 1, 1954, this plan is carried into effect, and a partnership is formed under the same name as that of the present company by C. M. Dale, A. V. Dale, and S. S. Dale, equal partners.

The reorganization will proceed as follows:

- (1) Bad debts are written off in the amount of \$4,000, and in addition \$1,000 is provided as an allowance against doubtful accounts.
- (2) The land is taken over at the estimated fair market value of \$22,000.
- (3) The corporation borrows \$4,000 in cash from each member of the firm for 30 days, giving the company's note in each case at 6%.
- (4) The corporation redeems the preferred stockholdings of Jones, Fletcher, and Sweet at the call price of \$110 per share.
- (5) C. M. Dale and A. V. Dale assigned their stockholdings to the firm; S. S. Dale transfers his holding of preferred stock and the mortgage on corporate real estate to the firm. The firm places a value of \$11,000 on the preferred shares and \$72,000 on the common shares.
- (6) The firm buys all the assets and business of the corporation at the adjusted book values.
- (7) The firm pays by assuming all corporate obligations as shown by the company's books and by delivering the outstanding stock certificates, the mortgage, and the partners' notes.
- (8) The partners' notes are canceled, their amounts being treated as contributed firm capital.
- (9) The corporation is dissolved.

*Instructions:* Prepare a comprehensive work sheet showing in columnar form the partnership's assets and liabilities after all transactions have been completed. Assume that all transactions are carried through as of January 1, 1954. (A.I.A. adapted)

21-8. The Colt Company submits the following balance sheet, dated June 30, 1953:

ASSETS	
Current assets.....	\$2,000,000
Fixed assets, less reserves.....	2,500,000
Intangible assets.....	3,000,000
Organization expenses.....	500,000
Deferred charges.....	100,000
	<hr/>
	\$8,100,000

## LIABILITIES

Current liabilities .....	\$ 500,000
Preferred stock — 8% cumulative — 400,000 shares of \$10 each.....	4,000,000
Common stock — 300,000 shares of \$10 each .....	3,000,000
Earned surplus.....	600,000
	<hr/>
	\$8,100,000

The common stock was issued for the intangible assets acquired at organization.

The company had been in existence for a period of five years but had paid no preferred dividends, so that on June 30, 1953, an amount of \$1,600,000 was in arrears. In order to liquidate this obligation and properly restate the accounts, the board of directors had previously submitted a plan of recapitalization, to take effect on June 30, 1953, which was accepted by all the shareholders, as follows:

- (1) The company is to amend its articles of incorporation and change its capital structure so that the recapitalization may take effect as of June 30, 1953, as follows:
  - (a) The authorized capital will be \$5,100,000, consisting of 480,000 shares of 4% preferred of \$10 each and 300,000 shares of common of \$1 each. The preferred shares may be made either cumulative nonparticipating or noncumulative participating.
  - (b) The 8% preferred shareholders are to relinquish all claims for dividends, for which they are to receive 50% of the amount of their claims in new preferred stock at par value.
  - (c) The 8% preferred shareholders have up to December 31, 1955, the option to exchange their shares and reduced dividend claims par-for-par either for 4% cumulative nonparticipating preferred with dividends cumulative from June 30, 1953, on, or for 4% noncumulative participating preferred shares. The noncumulative shares will participate equally with the common shares in the earnings after June 30, 1953, that are in excess of the preferred dividend requirements, up to 30% of this excess.
  - (d) The par value of the common shares will be reduced from \$10 to \$1 a share.
- (2) The company is to declare a dividend of 20 cents, payable on July 15, 1953, on the 4% cumulative nonparticipating preferred shares.

On July 1, 1953, holders of 90% of the 8% preferred shares elected to take the 4% cumulative nonparticipating shares and holders of the remaining 10% to postpone their choice.

*Instructions:* (1) Prepare a balance sheet as of June 30, 1953, after giving effect to the recapitalization plan.

(2) Prepare the entries that are to be made on December 31, 1955, in the event that holders of 30,000 shares of 8% preferred elect, between June 30, 1953, and December 31, 1955, to exchange them for 4% cumulative preferred and the holders of the remaining 10,000 shares to take 4% noncumulative shares. Assume that no preferred dividends have been paid or declared since July 15, 1953. (A.I.A. adapted)

**21-9.** You have been called in by a member of the board of directors of the Fox Corporation for advice in connection with a proposed plan of reorganization. He provides you with the information that follows:

The Fox Corporation is a manufacturer of machine tools. Its business has shown wide fluctuations and there have been corresponding variations in profits. For a number of years prior to 1951 there had not been any significant average earnings; however, for the year 1951 there was a net profit of \$942,100. As of December 31, 1951, the following statement was prepared:

\$3 Cumulative preferred stock, \$50 par value — outstanding 96,200 shares (dividends in arrears since September 30, 1935) .....	\$4,810,000
Common stock, no-par outstanding 120,000 shares at assigned value of .....	3,365,473
Earned deficit 1/1/51 .....	(\$1,174,280)
Profit for 1951 .....	942,100 (232,180)
Total .....	\$7,943,293

Parenthesis ( ) denotes red figure.

A plan of capital adjustment had been worked out during 1951, which was ratified by the stockholders and made effective as of January 1, 1952. This plan provided that the \$3 preferred was to be reduced from \$50 par value to \$40 par value; that it continue to be preferred for \$3 per share dividends on a cumulative basis and that it be preferred in liquidation at \$50 per share and redeemable at the option of the company at \$55 per share. In settlement of dividends in arrears, the company paid \$360,750 cash and issued 216,450 shares of "B" stock having a par value of \$10 per share. The "B" shares are nonvoting and are not entitled to dividends. They are redeemable at \$20 per share and entitled to \$20 per share after preferred but prior to common in liquidation. The agreement under which they are issued provides that a cash redemption fund shall be set up equal to 50% of the yearly net profits in excess of dividend requirements on preferred stock. The fund is to be used to purchase and retire "B" stock. Tenders are to be obtained from stockholders, the lowest being accepted. If no tenders are received within three months after January 1 of each year, the shares to be retired are to be determined by lot. The provisions of issue also state that as long as any "B" stock is outstanding, no dividends may be paid on common stock. The assigned value of common was also reduced to \$600,000.

The surplus created by this restatement of stock was treated in accordance with accepted accounting practice. All stockholders accepted the exchange offer.

The operations for the year 1952 resulted in a net profit, after taxes, of \$1,631,316. Dividends for the full year were paid on the preferred stock.

It now appears that operations are going to be profitable for an indefinite period and the board of directors desires to work out a plan whereby common stock can be put on a dividend basis. Preferred is currently selling for \$52 per share and "B" stock for \$9.50 per share.

Based on these values, a plan is under consideration by the board of directors, which it is hoped will enable them to place common on a dividend basis if good earnings continue. This plan calls for authorizing a 5% debenture issue, which will be offered to the preferred stockholders in exchange for their stock at the rate of \$100 of debentures and 2 shares of common for each 2 shares of preferred. It is anticipated that the common will be put on a \$1 annual dividend basis after the capital adjustments proposed. Holders of "B" stock are to be offered 1 share of new 6% preferred, which is to be issued having \$100 par value, and 5 shares of common for each 10 shares of "B" stock, all before use of the retirement fund.

*Instructions:* (1) Prepare a summary of the capital and the surplus of the company as of December 31, 1952.

(2) Prepare a statement showing the condition that would exist on January 1, 1953, if the reorganization plan were made effective as of that date.

(3) Prepare a statement showing the amount of earnings per share of common stock in 1952 if the proposed plan could have been in effect as of January 1, 1952. (Assume that the corporate income tax rate for 1952 is 40%.) (A.I.A. adapted)

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**Surplus*****Paid-In, Revaluation, and Earned*****NATURE OF SURPLUS**

The difference between assets and liabilities is proprietorship or capital, the owners' equity in assets. In a sole proprietorship, the owner's entire interest in assets resulting from investments, withdrawals, and past profit and loss activities may be reflected in a single capital account. In a partnership, capital balances for the individual partners may reflect partners' full equities resulting from investments, withdrawals, and shares in past profit and loss. It has already been indicated that, because of the nature of the corporation form, a portion of corporate capital is designated as legal capital and is reported in the accounts as capital stock. The amount by which the total corporate capital exceeds legal capital or the capital stock element is known as *surplus*.

In its most elemental form the surplus item is the meeting place of the balance sheet accounts and the income statement accounts. The balances of the profit and loss accounts period after period are carried to surplus. Distributions of profits in the form of dividends reduce surplus. As a result, the surplus balance represents the net accumulated reinvested earnings of the corporation. If the nature of surplus were as simple as thus indicated, there would be little confusion in its interpretation as well as in its use. But a number of factors tend to complicate the nature of surplus, and these must be recognized in the analysis and the use or disposition of this item. Among these factors are: the legal nature of paid-in capital, a portion of which may be defined as surplus; transactions between the corporation and its stockholders that affect surplus; revaluation of assets that create unrealized surplus; recapitalizations that result in transfers between capital stock and surplus; the legal requirements affecting surplus in the protection of owner and creditor groups; and the legal and contractual limitations upon the use of surplus for dividends. Today, surplus is one of the most difficult items on the balance sheet to define. Because of this difficulty, it is misunderstood and often misleads those who attempt to interpret balance sheets. Surplus deserves careful and searching consideration.

**CLASSIFICATION OF SURPLUS**

While a basic distinction must be made between capital stock and surplus in reporting corporate capital, the fact that surplus may emerge from sources other

than earnings suggests that this item be reported in terms of its special sources if one is fully to appreciate the character and the origin of the stockholders' interest. Surplus originates from three primary sources as follows:

(1) *Contributions by owners not classified as legal capital.* Within this class are included such items as original capital contributed for shares in excess of their par or stated value, capital arising from treasury stock transactions, capital arising from donations by stockholders, and capital transfers made upon the reduction of capital stock par or stated values. Capital emerging from owners' contributions but not forming a part of the stated or legal capital is referred to as *paid-in surplus*. The increase in corporate capital as a result of contributions of properties by outsiders is also normally included within the paid-in surplus grouping, although it would be possible to recognize a separate *donated surplus* category for capital increases of this character.

(2) *Recognition in the accounts of appraisal values.* The recognition in the accounts of appraisal values, that is, changes in property values that do not emerge from a transaction and hence are unrealized, gives rise to *revaluation* or *appraisal surplus*.

(3) *Transactions involving the sale of goods and services and resulting in profit and loss.* Accumulated earnings arising from transactions of the business unit with outsiders give rise to *earned surplus* or *retained earnings*. When a portion of earned surplus is unavailable for dividends, it may be referred to as *appropriated*; any balance, then, is regarded as *unappropriated* or *free*. While earned surplus may be appropriated, it nevertheless remains as a part of the company's accumulated earnings.

One frequently finds reference to the term *capital surplus*. This term is normally used to refer to all surplus other than that resulting from earnings; however, in certain instances it is used in a restricted sense to report only paid-in surplus balances. The capital surplus designation should be discouraged in view of the varying meanings that are attached to this term and the fact that existence of paid-in and appraisal surplus elements would normally warrant separate disclosure rather than combined reporting under a catchall heading.

Separate accounts should be maintained in the ledger for each separate source of surplus within each of the classifications listed. Hence, separate accounts are provided for a premium on preferred stock and a premium on common stock; for a surplus appropriation relating to a bond sinking fund and for a surplus appropriation required upon the acquisition of treasury stock; and for the appraisal increase relating to land and for that relating to buildings. In pre-

senting corporate proprietorship on the accounting statements, however, the individual surplus items are generally summarized under the class headings named.

Even though legal requirements provide for a separation of the stockholders' contribution into the two elements, capital stock and surplus, it would still appear desirable to relate these elements in the capital section of the balance sheet and thus distinguish between contributed capital and other capital sources. While paid-in surplus is not subject to the same legal restrictions as that part of the investment given the legal status of capital stock, it should nevertheless be recognized for what it represents — a part of the stockholders' investment. If capital stock and paid-in surplus are to be related on the balance sheet, the capital section may be stated as follows:

Capital:

Contributed capital:

Capital stock . . . . .	\$1,000,000	
Paid-in surplus . . . . .	<u>400,000</u>	\$1,400,000

Earned surplus:

Appropriated . . . . .	\$ 150,000	
Unappropriated . . . . .	<u>500,000</u>	<u>650,000</u>

Total capital . . . . .		<u>\$2,050,000</u>
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One frequently finds, however, that paid-in surplus is reported as a separate classification. Capital stock as defined by law and the other capital classes are reported separately in the following manner:

Capital:

Capital stock . . . . .	\$1,000,000
Paid-in surplus . . . . .	<u>400,000</u>

Earned surplus:

Appropriated . . . . .	\$150,000	
Unappropriated . . . . .	<u>500,000</u>	<u>650,000</u>

Total capital . . . . .		<u>\$2,050,000</u>
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Sometimes capital is divided into only two sections, capital stock and surplus. When this is the case, paid-in surplus and earned surplus appear as subdivisions of a surplus total, as follows:

Capital:

Capital stock . . . . .	\$1,000,000
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Surplus:

Paid-in . . . . .	\$400,000
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Earned:

Appropriated . . . . .	\$150,000	
Unappropriated . . . . .	<u>500,000</u>	<u>650,000</u>

Total capital . . . . .		<u>\$2,050,000</u>
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When there is a revaluation surplus, it should be reported as a separate class of surplus in the capital section.

The treatment of two negative capital elements, a stock discount balance and a negative earned surplus or *deficit* balance, requires special consideration. A discount on stock should be related neither to paid-in surplus nor to earned surplus; instead it should be directly identified with the capital stock balance from whose issue it arose. When the legal capital is equal to the capital stock balance, subtraction of the discount from capital stock discloses that the amount of invested capital is less than the legal capital; however, creditors may regard themselves as being protected by the figure reported as capital stock, since under appropriate circumstances the discount is converted into a claim against stockholders, thus raising the invested capital to the capital stock or legal capital balance. A deficit balance, while shrinking corporate capital, should not be related to capital stock or paid-in surplus elements but should be reported as an impairment in invested capital as a whole.

If a capital section is to be prepared following the first form illustrated on page 657, discount and deficit balances would appear as follows:

Capital:

Contributed capital:

Preferred stock	.....	\$100,000	
Common stock	.....	\$100,000	
Less: Discount on common stock	40,000	60,000	
Paid-in surplus	...	85,000	\$245,000
Deduct: Deficit	.....		60,000
Total capital	.....		\$185,000

Capital stock and surplus elements together form corporate proprietorship or the full equity of stockholders in the assets employed by the business unit. While the balances are reported separately, neither an individual balance nor the combined balances can be related to specific assets. Invested capital balances suggest asset contributions by the owners that gave rise to proprietorship; an earned surplus balance indicates an increase in net assets resulting from profitable operations that gave rise to an increase in proprietorship; a deficit indicates a decrease in net assets resulting from unfavorable operations that resulted in an impairment in invested capital.

**PAID-IN SURPLUS**

Contributions to corporate capital that do not form a part of the corporate legal or stated capital are recognized as paid-in surplus. A number of different transactions between the corporation and its stockholders affecting paid-in surplus were described in the preceding chapter. Paid-in surplus arose from such varied transactions as the sale of shares at amounts in excess of their par or stated value, stock payment forfeitures, stock assessments, stock donations, capital increases resulting from dealings in treasury stock, and recapitalizations. It was suggested that contributions by nonownership groups that serve to increase corporate capital are also frequently regarded as giving rise to paid-in surplus.

Paid-in surplus has become increasingly important with the introduction of no-par stock with a stated value. When par stock was sold at a premium, the amount of the paid-in surplus was normally a relatively small percentage of the total price; in the case of no-par stock with a stated value, however, the paid-in surplus may be several times as large as the credit to capital stock. For example, the sale of 10,000 shares of stock, par \$25, sold at \$30, results in capital stock of \$250,000 and paid-in surplus of \$50,000; the sale of 10,000 shares of no-par stock, stated value \$10, sold at \$30, produces a capital stock balance of \$100,000 and a paid-in surplus of \$200,000.

While the prevailing practice is to show a single total for paid-in surplus on the balance sheet, the separate accounts reporting differences in origins of such paid-in amounts appear in the ledger. Paid-in surplus sources and the accounts summarizing such surplus are listed below:

SOURCE	PAID-IN SURPLUS ACCOUNT
Amount received on sale of stock in excess of stock par value	Premium on Stock
Amount received on sale of stock in excess of stock stated value	Paid-in Surplus from Sale of Stock in Excess of Stated Value
Stock subscription defaults resulting in forfeiture of amounts paid-in	Paid-in Surplus from Forfeited Subscriptions
Receipt of assessments levied on stockholders	Paid-in Surplus from Stock Assessments (except where stock was originally sold at a discount and stock assessments are considered to be proper credits to such discount)
Retirement of outstanding stock at an amount less than that originally received on the issue of the stock	Paid-in Surplus from Stock Redemption
Conversion of outstanding stock into a new issue with a smaller total par or stated value	Paid-in Surplus from Stock Conversion

SOURCE	PAID-IN SURPLUS ACCOUNT
Reduction in stock par (or stated) value as a result of recapitalization	Paid-in Surplus from Recapitalization (or Paid-in Surplus from Reduction in Par [or Stated] Value of Stock)
Sale of treasury stock at more than acquisition cost	Treasury Stock Surplus (or Paid-in Surplus from Sale of Treasury Stock in Excess of Cost)
Donation of stock or properties or forgiveness of corporate indebtedness by stockholders	Donated Surplus from Contributions by Stockholders
Donation of properties and forgiveness of indebtedness by governmental authorities and other outsiders	Donated Surplus from Contributions by Governmental Authority, etc.

Charges should be made to paid-in surplus balances only when (1) transactions are considered to reduce such paid-in capital balances directly or (2) there is an express authorization for such a reduction. To illustrate (1) above, the acquisition and the retirement of a preferred stock issue calls for the cancellation of both the capital stock balance and any premium or paid-in surplus balance relating to the original issue of the preferred stock; all reference to paid-in capital relating to the preferred stock should be canceled with the redemption of this class of stock. However, it would not be appropriate to charge any other paid-in surplus with any part of the amount paid on the retirement of a preferred issue; to do so would be to obscure the data with respect to capital arising from other sources. To illustrate (2) above, authorization of the capitalization of a portion of a particular paid-in surplus element would call for a reduction in the surplus balance and an increase in the capital stock balance.

Paid-in surplus balances should not be charged with losses whether from normal operations or from extraordinary sources, nor should paid-in surplus be used for the cancellation of a deficit in the absence of formal steps taken to effect a quasi-reorganization as previously described in Chapter 17. Authorities are in general agreement on this matter. The American Institute Committee on Accounting Procedure has declared:

Capital surplus, however created, should not be used to relieve the income account of the current or future years of charges which would otherwise fall to be made thereagainst. This rule might be subject to the exception that where, upon reorganization, a reorganized company would be relieved of charges which would require to be made against income if the existing corporation were continued, it might be regarded as permissible to accomplish the same result without re-

organization provided the facts were as fully revealed to, and the action as formally approved by, the shareholders as in a reorganization.<sup>1</sup>

The Chief Accountant of the Securities and Exchange Commission in a similar vein in Accounting Series Release No. 1 makes the following statement:

It is my conviction that capital surplus should under no circumstances be used to write off losses which, if currently recognized, would have been chargeable against income. In case a deficit is thereby created, I see no objection to writing off such a deficit against capital surplus, provided appropriate stockholder approval has been obtained. In this event, subsequent statements of earned surplus should designate the point of time from which the new surplus dates.<sup>2</sup>

The American Accounting Association states, "The distinction between paid-in capital and retained income should be permanent." Paid-in capital may be reduced, the Association holds, "by the redemption or other reduction of outstanding shares, payments of liquidating dividends, or adjustments effected by a corporate reorganization."<sup>3</sup>

The availability of paid-in surplus as a basis for dividends depends upon the laws of the state of incorporation. In the absence of legal restrictions, paid-in surplus can be used as a basis for dividends. Laws may provide restrictions upon the use of all paid-in surplus or upon the use of only certain classes of paid-in surplus. Separate accounts in the ledger summarizing paid-in surplus elements by source will make possible the ready determination of distributable surplus. When surplus other than earned surplus is used as a basis for dividends, stockholders should be notified concerning the source of such distributions, since this group has the right to assume that dividends represent distributions of corporate earnings in the absence of notice from the corporation to the contrary.

## REVALUATION SURPLUS

The problems and procedures involved in recording an increase in plant assets after their valuation by independent appraisers and the authorization for use of this information in the accounts by the board of directors were de-

<sup>1</sup>*Accounting Research Bulletin No. 3*, "Quasi-Reorganization or Corporate Readjustment — Amplification of Institute Rule No. 2 of 1934," September, 1939 (New York: American Institute of Accountants), p. 25.

<sup>2</sup>*Accounting Series Release No. 1*, "Treatment of losses resulting from revaluation of assets," April 1, 1937 (Washington, D. C.: United States Securities and Exchange Commission).

<sup>3</sup>"*Accounting Concepts and Standards Underlying Corporate Financial Statements*," 1948 Revision (Urbana: American Accounting Association), p. 5.

scribed in Chapter 17. Charges to assets for increases established by appraisal were accompanied by credits to revaluation surplus accounts. Such surplus is separately designated in the capital section. Readers of the balance sheet are thus made aware of the fact that property items are stated at amounts in excess of cost and that this has resulted in an unrealized surplus element.

Disposal of an asset that has been increased by appraisal results in cancellation of the asset balance at appraised value, cancellation of the related revaluation surplus, and recognition of a gain or a loss that is based upon cost.

When a depreciable asset is increased as a result of appraisal and when depreciation is reported on the basis of appraised value, transfers should be made periodically from revaluation surplus balances to earned surplus so that the latter account is corrected for the profit understatement and revaluation surplus shows no more than the appraisal increase still reflected in the asset balance. When the asset is fully depreciated, the full amount of the revaluation surplus will have been transferred to earned surplus. Entries that are made periodically to record depreciation on property items at their appraised values and to record the transfer of revaluation surplus to earned surplus after the accounts are closed were previously described and illustrated on page 491.

When depreciation is recorded at cost, the entry for depreciation is accompanied by an entry reducing the asset increase and the revaluation surplus. Here, too, when the asset is fully depreciated, the full amount of the appraisal increase will have been canceled. Entries that are made periodically to record depreciation on appraised property items at cost and to reduce property items and revaluation surplus were previously described and illustrated on page 489.

Revaluation surplus shrinks or disappears only as the asset value from which it emerged shrinks or disappears. Revaluation surplus should never be used to absorb operating losses or the write-down of properties other than those values representing the source of such surplus. Revaluation surplus representing unrealized earnings is not properly used as a basis for cash dividends; however, its use as a basis for stock dividends is permitted in some states.

**EARNED SURPLUS**

Earned surplus is the terminus of all profit and loss accounting. The earned surplus account is increased by profits from normal operations involving the sale of commodities or services and is reduced by losses from these

activities. Earned surplus is also affected by: (1) extraordinary profit and loss items, including gains and losses arising from the sale of securities or plant assets and the retirement of long-term debt, and charges arising from the write-off of worthless securities or other assets and the arbitrary write-down of goodwill and other intangibles; and (2) corrections in profits of prior periods. As previously indicated, these items may be recorded in separate accounts and reported under an appropriate heading following a summary of normally recurring items on the income statement, or they may be recorded directly in earned surplus and reported on the surplus statement.

Corporate earnings increasing earned surplus arise only from transactions with individuals or businesses outside of the company. No earnings are recognized in the manufacture of machinery or other plant items for a company's own use, even though the cost of such manufacture is below the price that would have to be paid for the purchase of similar assets; self-construction at less than the asset purchase price is simply regarded as a savings in cost. No earnings are recognized on transactions with stockholders involving treasury stock; purchase of treasury stock is considered a payment of funds to stockholders in the reduction of corporate capital, and sale of treasury stock is considered a receipt of funds from stockholders in the expansion of capital. The receipt of properties through donation and the recognition of changes in asset values in the accounts are not regarded as earnings; the donation is regarded as giving rise to additional invested capital, while the appraisal increases are recognized as giving rise to a special unrealized surplus element.

The earnings of a corporation may be distributed to the stockholders or they may be retained to provide for expanding operations. When earnings are retained, they may be appropriated so as to be reported as unavailable for dividend declaration. Appropriations may be returned to earned surplus after the purpose of the appropriation has been fulfilled. When operating losses or other charges to the earned surplus account produce a debit balance in this account, the debit balance is referred to as a *deficit*.

#### **DATED EARNED SURPLUS**

Any profits earned after a corporate quasi-reorganization should be separately summarized and reported on the balance sheet as earned surplus dating from the time of such action. *Dated earned surplus* seeks to inform investors and others of the occurrence of a restatement of capital and the financial progress that has been made since that time.

The Chief Accountant of the Securities and Exchange Commission has stated that when a deficit is charged to paid-in capital previously existing or arising in the course of a quasi-reorganization, (1) full disclosure of the point of time from which the new earned surplus dates should be made on all subsequent statements of surplus, and (2) until such time as the results of operations of the company on the new basis are available for an appropriate period of years (at least 3), any statement or showing of surplus should, in order to provide additional disclosure of the occurrence and the significance of the quasi-reorganization, indicate the total amount of the deficit and any charges that were made to paid-in surplus in the course of the quasi-reorganization which would otherwise have been required to be made against income or surplus.<sup>1</sup> Furthermore, when a company is permitted by state law to charge a deficit to capital surplus pursuant to a resolution by the board of directors and without approval by stockholders, the Commission would require "complete disclosure of all of the attendant facts and circumstances and their effect on the company's financial position in each balance sheet and surplus statement . . . ." A statement indicating the possible effects of such action on the character of future dividends would also be called for, appropriate disclosure being made in a form such as follows:

It should be noted that on \_\_\_\_\_ by action of the board of directors, without action by stockholders, the company charged off a \$ \_\_\_\_\_ deficit in earned surplus against its capital surplus. This procedure will permit the company in the future to reflect undistributed earnings subsequent to \_\_\_\_\_ as earned surplus, instead of as a reduction of the deficit charged off to capital surplus. One result of this procedure is to permit the distribution, as ordinary dividends, of earned surplus accruing subsequent to \_\_\_\_\_, without regard to the deficit charged off to capital surplus. Furthermore, if earnings subsequent to \_\_\_\_\_ are less than the deficit written off, distributions thereof may in effect represent distributions of capital or capital surplus.<sup>2</sup>

## DIVIDENDS

Dividends are distributions to stockholders of the corporation in proportion to the number of shares that are held by the respective owners. Such distributions may take the form of (1) cash, (2) other properties, (3) evidences of corporate indebtedness, or (4) additional stock issue. All of the fore-

<sup>1</sup>*Accounting Series Release No. 15*, "Description of surplus accruing subsequent to effective date of quasi-reorganization," March 16, 1940 (Washington, D. C.: United States Securities and Exchange Commission).

<sup>2</sup>*Accounting Series Release No. 16*, "Disclosure of charge of deficit to capital surplus without approval of stockholders," March 16, 1940 (Washington D. C.: United States Securities and Exchange Commission).

going distributions involve a reduction in surplus, except dividends in corporate liquidation, which involve a return to stockholders of a portion or all of the corporate legal capital and thus are reductions in capital designated by the capital stock balance.

The term *dividend* is generally used to imply the distribution of a cash dividend, with past accumulated earnings as the source of such a distribution. Dividends in a form other than cash should be designated in terms of the nature of the distribution; dividends that are declared from a capital source other than retained earnings should likewise carry a special description of their special origin. The terms *stock dividend*, *property dividend*, and *scrip dividend* suggest distributions of a special nature; designations such as *liquidating dividend*, *stock dividend of appraisal increment*, and *dividend distribution of paid-in surplus* would serve to identify clearly the special capital origin of the distribution.

“Dividends paid out of surplus” is an expression frequently encountered. Accuracy, however, would require the statement that dividends are paid out of cash, which serves to reduce surplus. Investment by owners results in an increase in property and in the owners’ equity in property. Dividend distribution represents no more than asset withdrawals reducing both the amount of property and the owners’ equity in that property.

Dividends require special action as to their declaration by the board of directors. In declaring dividends, the board of directors must observe the special legal requirements with respect to the maintenance of legal or stated capital. These requirements vary with the individual states.<sup>1</sup> In addition to observing legal requirements, the board of directors must consider the financial aspects of dividend distributions — the company asset position, present asset requirements, and future asset requirements. The board of directors, then, must answer two questions: Do we have the legal right to declare a dividend? Is such a distribution financially sound?

When a dividend can legally be declared and the board of directors takes appropriate action and makes announcement of the action to

<sup>1</sup>Laws range from those making earned and paid-in surplus of any character available for dividends to those permitting dividends from retained earnings only under specified conditions. In most states dividends cannot be declared in the event of a deficit; in a few states, however, dividends, equal to current earnings may be distributed despite a previously accumulated deficit. The availability of capital as a basis for dividends is a determination to be made by the attorney and not by the accountant. The accountant must report accurately the sources of each capital increase; the attorney will investigate the availability of such sources as bases for dividend distributions.

stockholders, revocation of the dividend is not possible. The corporation must now recognize a liability to stockholders. In the event of corporate insolvency prior to the dividend distribution, stockholders would have claims as a creditor group for the amount of the dividend and interests as an ownership group in any residual distributions that may be made after corporate liabilities have been met in full. A dividend that was illegal upon its declaration is revocable; in the event of insolvency, such an action would be nullified and stockholders would participate in asset distributions only after creditors have been paid in full.

### CASH DIVIDENDS

The most common type of dividend is a *cash dividend*, which provides a cash return to holders of capital stock. For the corporation, such dividends involve a reduction in surplus and in cash. A current liability for dividends payable is recognized on the declaration date; this is canceled when dividend checks are distributed to stockholders. Entries to record the declaration and the payment of a cash dividend follow:

Earned Surplus .....	100,000	
Dividends Payable .....		100,000
Dividends Payable .....	100,000	
Cash .....		100,000

In declaring a cash dividend, the board of directors must consider the limitations set by the current position and the cash balance. For example, a corporation may have earned surplus of \$500,000. If, however, it has cash of only \$150,000, it will not be able to pay a \$500,000 dividend unless certain other assets can be converted into cash or unless cash is borrowed for this purpose. If the necessary cash balance for regular operations is \$100,000, the cash immediately available for dividend payment is only \$50,000. While earned surplus may offer a legal basis for the declaration of dividends of \$500,000, the amount distributable at this time is limited to one tenth of this figure, since the profits retained are not in a form that makes them available for distribution.

### SCRIP DIVIDENDS

If a corporation has surplus that may be used as a basis for dividend declaration but does not have sufficient funds at the time for a cash dividend, it may declare a *scrip dividend*, which consists of a written promise to pay a certain amount at some future date. The corporation is thus able to take regu-

lar dividend action even though it is temporarily short of cash. Stockholders, in turn, are provided currently with an instrument that they may discount for cash if they wish, provided the credit of the corporation is satisfactory. Such dividends are not commonly employed.

Assume that a scrip dividend of \$150,000 is declared, payable six months hence together with interest at the rate of 6% for the period of payment deferment. The declaration of the dividend is recorded as follows:

Earned Surplus.....	150,000	
Scrip Dividend Payable .....		150,000

When the scrip matures, the entry is:

Scrip Dividend Payable .....	150,000	
Interest Expense.....	4,500	
Cash.....		154,500

**PROPERTY DIVIDENDS** A distribution to stockholders that is payable in some asset other than cash is generally referred to as a *property dividend*. Frequently, the asset to be distributed is certain securities of other companies that are owned by the corporation. The corporation thus transfers to its stockholders its ownership interest in such securities. A property dividend avoids the necessity of sale of assets for the payment of dividends. When the value of the property exceeds its cost, no recognition would need to be made for tax purposes by the corporation of a "gain" on such an asset. However, for tax purposes stockholders will be required to recognize dividend income equal to the fair market value of the asset acquired. To illustrate the accounting for a property dividend, assume that the State Oil Corporation owns 100,000 shares in the Valley Oil Co., cost \$10,000,000, and that it desires to distribute this holding to its stockholders. There are 1,000,000 shares of State Oil Corporation stock outstanding. Accordingly, a dividend of 1/10 of a share of Valley Oil Co. stock is declared on each share of State Oil Corporation stock outstanding. The entries for the declaration and the distribution of the dividend are:

Earned Surplus.....	10,000,000	
Dividend Payable in Stock of Valley Oil Co. .		10,000,000
Dividend Payable in Stock of Valley Oil Co. . .	10,000,000	
Investment in Stock of Valley Oil Co. ....		10,000,000

**STOCK DIVIDENDS** A corporation may issue additional shares of stock in proportion to original share holdings by stockholders. Such a distribution is known as a *stock dividend*. A stock dividend permits the corporation to retain accumulated earn-

ings within the business while at the same time offering stockholders evidence of their respective interests in accumulated corporate earnings.

Reference to a stock dividend usually implies (1) the capitalization of earned surplus and (2) a distribution of common stock to common stockholders. Such distributions are sometimes termed *ordinary stock dividends*. In some states, stock dividends may be effected by transfers of paid-in surplus or appraisal surplus to the legal or stated capital accounts. In some instances, common or preferred stock has been issued to holders of preferred stock or preferred stock has been issued to holders of common stock. The latter situations, however, are relatively unusual. Such distributions are sometimes referred to as *special stock dividends*.

The ordinary stock dividend makes a portion of retained earnings no longer available for distribution while raising the legal capital of the corporation. As far as the recipient is concerned, there is an increase in the number of shares that he holds, but his respective interest in the corporation remains unchanged; the effects of a stock dividend in terms of his corporate interest are no different than those of a stock split-up.

In distributing shares of stock as a dividend, the issuing corporation must meet legal requirements as to the amount of earned surplus requiring transfer to the capital stock account. When stock has a par or a stated value, an amount equal to the value of the shares issued will normally require transfer from surplus to capital stock; when stock is no-par and without a stated value, the laws of the state of incorporation may provide specific requirements as to amounts to be transferred or they may leave such determinations to the corporate directors.

Although laws set requirements as to transfers from earned surplus to legal or stated capital balances upon the issuance of additional shares of stock, the board of directors is not prevented from going beyond legal requirements and taking action to raise both capital stock and paid-in surplus balances. For example, assume that stock, par \$100, was originally issued at 120. Legal requirements may call for the transfer from surplus to capital stock of no more than the par value of the stock issued as a dividend. The board of directors, however, in order to preserve the original capital stock and paid-in surplus relationship, may authorize a transfer from earned surplus of \$120 per share; capital stock, then, may be increased by \$100 and the premium balance by \$20 for every share issued. Or the board of directors, at its discretion, may decide that the earned surplus transfer shall be made in terms of the current fair market value of shares, which exceeds the legal

value per share. Here, too, the charge to earned surplus in excess of the par or the stated value of the stock issued calls for a credit to an appropriate premium or other paid-in surplus balance.

The Committee on Accounting Procedure of the American Institute of Accountants has indicated that proper corporate policy in certain situations would call for the capitalization of an amount equal to the fair market value of shares issued as a stock dividend. The Committee points out:

... a stock dividend does not, in fact, give rise to any change whatsoever in the corporation's assets or its respective shareholders' proportionate interests therein. However, it cannot fail to be recognized that, merely as a consequence of the expressed purpose of the transaction and its characterization as a "dividend" in related notices to shareholders and the public at large, many recipients of stock dividends look at them as distributions of corporate earnings and usually in an amount equivalent to the fair market value of the additional shares received. Furthermore it is to be presumed that such views of recipients are materially strengthened in those instances, which are by far the most numerous, where the issuances are so small in comparison with the shares previously outstanding that they do not have any apparent effect upon the share market price and, consequently, the market value of the shares previously held remains substantially unchanged. The committee therefore believes that where these circumstances exist the corporation should in the public interest account for the transaction by transferring from earned surplus to the category of permanent capitalization (represented by the capital stock and capital surplus accounts) an amount equal to the fair value of the additional shares issued. Unless this is done, the amount of earnings which the shareholder may believe to have been distributed to him will be left, except to the extent otherwise dictated by legal requirements, in earned surplus subject to possible future similar stock issuances or cash distributions.<sup>1</sup>

However, the Committee points out that certain circumstances would suggest the charge to surplus of no more than stock par, stated, or other value as required by law. The Committee points out:

Where the number of additional shares issued as a stock dividend is so great that it has, or may reasonably be expected to have, the effect of materially reducing the share value ... the implications and possible constructions discussed ... are not likely to exist and ... the transaction clearly partakes of the nature of a split-up .... Consequently, the committee considers that under such circumstances there is no need to capitalize earned surplus, other than to the extent occasioned by legal requirements. It recommends, however, that in such instances every effort be made to avoid the use of the word "dividend" in related corporate resolutions, notices, and announce-

<sup>1</sup>*Accounting Research Bulletin No. 11 Revised, "Stock Dividends and Split-Ups: Accounting Treatment by Stockholders and Corporation,"* November, 1952 (New York: American Institute of Accountants), p. 3.

ments and that, in those cases where because of legal requirements this cannot be done, the transaction be described, for example, as a "split-up effected in the form of a dividend."<sup>1</sup>

The Committee feels that the majority of stock dividends will probably fall within the first category stated above, suggesting charges to surplus of amounts in excess of legal requirements. While the Committee is reluctant to name a dividend percentage that would require adherence to this practice, it does suggest that in stock distributions of recent years involving the issuance of less than 20% to 25% of the number of shares previously outstanding, there would be but few instances where charges to surplus at the fair market value of additional shares issued would not be supportable.

The examples that follow illustrate the entries that are made for the declaration and the issue of a stock dividend. Assume that the capital for the Bradford Co. on July 1 is as follows:

Capital stock 10,000 shares outstanding, par \$10 . . . . .	\$100,000
Premium on stock . . . . .	10,000
Earned surplus . . . . .	75,000

The company declares a 10% stock dividend, or a dividend of 1 share for every 10 held. Shares are selling on the market on this date at \$15 per share. The stock dividend is to be recorded at the market value of the shares issued, or \$15,000 (1,000 shares at \$15). The entries to record the declaration of the dividend and the stock issue follow:

Earned Surplus . . . . .	15,000	
Stock Dividend Payable . . . . .		10,000
Premium on Stock . . . . .		5,000
Stock Dividend Payable . . . . .	10,000	
Capital Stock . . . . .		10,000

The effects of the stock dividend upon invested capital here are the same as would be the effects of the sale of such additional shares at market price.

Assume, however, that the company declares a 50% stock dividend, or a dividend of 1 share for every 2 held. Legal requirements call for the transfer from earned surplus to capital stock of an amount equal to the par value of the shares issued, and the stock dividend is recorded at this value. Entries for the declaration of the dividend and the dividend issue follow:

Earned Surplus . . . . .	50,000	
Stock Dividend Payable . . . . .		50,000

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<sup>1</sup>*Ibid.*, p. 4.

Stock Dividend Payable.....	50,000	
Capital Stock.....		50,000

If in the preceding case the board of directors wished to maintain invested capital balances in their original relationship, authorization could be made for capitalization of the issue at \$11 per share. Entries to record the dividend declaration and its issue then would be:

Earned Surplus.....	55,000	
Stock Dividend Payable.....		50,000
Premium on Stock.....		5,000
Stock Dividend Payable.....	50,000	
Capital Stock.....		50,000

When stock dividends are issued, *fractional share warrants* are given to stockholders whose holdings make them eligible for fractional shares. For example, when a 10% stock dividend is issued, a stockholder owning 25 shares could be given no more than 2 full shares; however, the holdings in excess of an even multiple of 10 shares are recognized by the issue of a fractional share warrant for  $\frac{1}{2}$  share. The warrant for  $\frac{1}{2}$  share may be sold, or a warrant for an additional  $\frac{1}{2}$  share may be purchased so that a full share may be claimed from the company. In some instances the corporation may distribute cash in lieu of fractional warrants or it may issue a full share of stock in exchange for warrants accompanied by cash for the fractional share deficiency.

Assume that, when the Miller Company issues a 10% stock dividend, it also issues fractional share warrants totaling 500 shares, par \$50. The entry for the fractional share warrants issued would be as follows:

Stock Dividends Payable .....	25,000	
Fractional Share Warrants Issued .....		25,000

Assuming that 80% of the warrants are ultimately turned in for shares and that the remaining warrants expire, the following entry would be made:

Fractional Share Warrants Issued .....	25,000	
Capital Stock (400 shares).....		20,000
Paid-in Surplus — From Forfeitures on Fractional Share Warrants.....		5,000

If a balance sheet is prepared after the declaration of a stock dividend but before its payment, Stock Dividend Payable is reported in the capital section as an addition to Capital Stock Outstanding. By the declaration of the dividend, the corporation has reduced its surplus and is committed to the increase of capital stock. The difference

between capital stock authorized and the sum of (1) capital stock issued, (2) capital stock subscribed, and (3) stock dividends payable represents the balance of stock that the corporation may still sell.

While a stock dividend can be compared to a stock split from the investors' point of view, its effects upon corporate capital differ from those of the stock split. A stock dividend results in an increase in the number of shares outstanding and in an increase in the capital stock balance, no change being made in the value assigned to each share of stock on the company records; the increase in capital stock outstanding is effected by a transfer from surplus, the surplus balance available for dividends being permanently reduced by this transfer. A stock split merely divides the existing capital stock balance into more parts and reduces the value assigned to each share; there is no change in the surplus available for dividends, both capital stock and surplus elements remaining unchanged.

There have been suggestions that the restatement of retained income as paid-in capital as a result of stock dividends, recapitalizations, or other appropriate action calls for special disclosure on the balance sheet. Such disclosure will serve to inform the statement reader what portion of capital originated from investment and what portion originated from retained earnings. For example, assume the information for the Bradford Co. on page 670 and the transfer to paid-in capital of \$55,000 on the issue of a stock dividend. Corporate capital may be presented in the following manner:

Paid-in capital:			
Capital stock	.	.	\$150,000
Premium on stock			15,000 \$165,000
Earned surplus			\$ 75,000
Less amount transferred to paid-in capital by			
stock dividend		55,000	20,000
		<hr/>	<hr/>
Total capital	.	.	\$185,000

## LIQUIDATING DIVIDENDS

A corporation may declare a *liquidating dividend* when the company is dissolving and the dividend is to be considered a partial distribution of the company assets in cancellation or redemption of the stock outstanding. Such distributions on the books of the corporation represent a reduction of the invested capital balances. Instead of actually debiting Capital Stock, however, it would be possible to charge a separate account for the impairment in invested capital, this balance to be subtracted from the invested capital balances in the preparation of balance sheets during the

course of liquidation. Liquidating dividends should be recorded on the books of the investor as amounts received in exchange for the stock owned.

Corporations owning wasting assets that are not being replaced may regularly declare dividends that are in part a distribution of current profits and in part a distribution of the corporation's invested capital. Entries on the corporation books for such dividend declarations should reflect the decrease in the two capital elements. This analysis should also be reported to stockholders in statements accompanying the dividend checks. The investor will recognize the profit distribution portion of the dividend as income, the liquidating portion as a reduction in the investment account balance. Accounting for a company with wasting assets and the entries to record distributions to stockholders representing both earnings and a return of investment were described on pages 458-460.

**DIVIDENDS ON  
PREFERRED STOCK**

When dividends on preferred stock are cumulative, the payment of a definite rate of return on these shares is necessary before any dividends may be paid on common. When the board of directors fails to declare dividends on cumulative preferred stock, information concerning the amount of dividends in arrears should be reported parenthetically or in footnote form on the balance sheet to provide full disclosure of the status of preferred and common stockholders. A division of earned surplus on the balance sheet into the amount required to meet dividends in arrears and the balance free for other purposes would also serve to inform readers of the dividend arrearages and the implications of such arrearages. Earned surplus would thus be reported on the balance sheet in the following manner:

Earned surplus:	
Required to meet dividends in arrears on preferred stock.....	\$40,000
Balance.....	12,000
Total earned surplus .....	\$52,000

The board of directors may pay a portion of a cumulative preferred dividend or a portion of the total in arrears. For example, 2% may be paid annually on 7% cumulative preferred stock, allowing 5% to accumulate for future payment. Or a payment of \$15 may be made on cumulative dividends in arrears of \$50, leaving \$35 as the balance in arrears.

**DIVIDENDS ON NO-PAR STOCK**

Cash dividends on no-par stock must be expressed as an amount per share, since a par figure upon which a percentage may be applied is lacking. It is also the prevailing practice to express dividends on par-value stock in the same manner.

When no-par stock is outstanding and the corporation desires to transfer an amount from earned surplus to capital stock, there is no need actually to declare a stock dividend. The corporation can simply take action to raise the stated value of the no-par stock. An entry such as the following is made on the books:

Earned Surplus . . . . .	500,000	
Capital Stock . . . . .		500,000
To raise \$5 stated value on 100,000 shares of no-par stock to \$10 in accordance with resolution by board of directors.		

**EXTRAORDINARY DIVIDEND DISTRIBUTIONS**

In the case of common stock, a corporation may establish a policy of regular dividends and may provide for greater payments through *extraordinary dividend distributions*, or *extra dividends*, when earnings warrant additional distributions. For example, a corporation may have a regular rate of 50 cents a quarter or \$2 a year per share on common stock. In a particular quarter it may wish to declare a dividend of 80 cents a share. Such a dividend may be expressed as a 50-cent regular dividend plus a 30-cent extra dividend.

**THE FORMAL DIVIDEND ANNOUNCEMENT**

Three dates are essential in the formal dividend statement: (1) date of declaration, (2) date of payment, and (3) date of stockholders' record. Dividends are made payable to stockholders of record as of a date that follows the date of declaration and precedes the date of payment. The announcement of a formal dividend declaration would read, "The Board of Directors of the Forrest Co. at their meeting on November 5, 1953, declared the regular quarterly dividend on outstanding common stock of 50 cents per share, payable on January 15, 1954, to stockholders of record at the close of business, December 20, 1953." The liability for dividends payable is recorded on the declaration date and is canceled on the payment date. No entry is required on the record date, but a list of the stockholders is made up as of the close of business on December 20. These are the persons who are to receive payment on January 15. A full record of the dividend declaration should be made in the minute book.

**SOURCE OF  
DIVIDENDS**

It is reasonable to assume that dividends have a closer relationship to current earnings than to those of past years. This would suggest that dividends be charged to current profit and loss rather than to surplus. Dividends Declared may be debited instead of surplus and the dividend declared account may be closed into the profit and loss account before the latter is closed into Earned Surplus. Dividends would be reported as a subtraction item at the bottom of the income statement, the balance on the statement after subtracting dividends from net income then representing the net change in earned surplus for the period. Such a practice provides a direct comparison between the earnings and the dividends in any one period. A number of corporate reports now show dividends as a disposition of current profits.

**QUESTIONS**

1. "Surplus is in general supported by a cross section of all the assets." "Directors are criticized by stockholders for failure to declare dividends when surplus is present." Are these two statements related? Explain.
2. Describe (a) earned surplus, (b) capital surplus, (c) paid-in surplus, (d) donated surplus, (e) appropriated surplus, (f) revaluation surplus.
3. Would you suggest that paid-in surplus is more closely related to capital stock or to earned surplus? How would you recommend that capital stock and surplus balances be classified and summarized in the capital section of the balance sheet?
4. (a) What are the sources of earned surplus? (b) What dispositions may be made of earned surplus?
5. (a) What circumstances give rise to a *dated earned surplus*? (b) Distributions out of earned surplus "may in effect represent distributions of capital or capital surplus." Explain and illustrate the foregoing assertion.
6. What objections can be raised to the use of the term *capital surplus* for all surplus other than earned surplus?
7. (a) Name the different sources of paid-in surplus and the accounts summarizing such items. (b) Indicate the circumstances that would call for a reduction in each of the paid-in surplus accounts named.
8. The Burrows Corporation reports an earned surplus balance of \$1,500,000. What reasons may be offered by the company for failure to use such legally available surplus as a basis for dividends?
9. Which of the following transactions are a source of surplus? Indicate the class of surplus in each case.
  - (a) Operating profits.
  - (b) Cancellation of a part of a liability upon prompt payment of the balance.
  - (c) Reduction of par value of stock outstanding.

- (d) Discovery of an understatement of income in a previous period.
- (e) Release of Reserve for Purchase of Treasury Stock upon the sale of treasury stock.
- (f) Issue of bonds at a premium.
- (g) Purchase of the corporation's own capital stock at a discount.
- (h) Increase in the company's earning capacity, taken to be evidence of considerable goodwill.
- (i) Construction of equipment for the company's own use at a cost less than the prevailing market price of identical equipment.
- (j) Donation to the corporation of treasury stock.
- (k) Sale of fixed assets at a profit.
- (l) Gain on bond retirement.
- (m) Revaluation of plant and equipment resulting in
  - (1) decrease in allowance for depreciation as a result of over-depreciation in past periods, and
  - (2) increase in asset book value as a result of increase in asset replacement value.
- (n) Collection of assessments from stockholders.

**10.** The accountant for the Walters Corporation closes stock discount and deficit balances into the paid-in surplus account and reports only the balance of paid-in surplus on the balance sheet. Do you approve?

**11.** What circumstances may call for the declaration of a scrip dividend?

**12.** (a) Define stock dividend. (b) What are the effects of a stock dividend on corporate capital accounts as compared with those of a stock split?

**13.** Summarize the recommendations of the American Institute Committee on Accounting Procedure with respect to the charge to be made to surplus on a stock dividend.

**14.** It has been recommended that the balance sheet maintain a permanent distinction between paid-in capital and retained earnings. How can such a distinction be maintained when action is taken to convert retained earnings into capital stock?

**15.** (a) How does revaluation surplus arise on the books? (b) What circumstances would call for a reduction in such a balance?

**16.** What objections can you raise for the use of revaluation surplus (a) to absorb operating losses, (b) as a basis for cash dividends, and (c) as a basis for stock dividends?

**17.** The J. R. Goodwin Corporation desires to retain its surplus from reappraisal of fixed assets as a part of its permanent capitalization rather than to write it off over the life of the assets. Why may this policy be desirable? How may this be accomplished?

**18.** Fixed assets with a book value of \$150,000 were sold by the Holmes Corporation for \$250,000. The chief accountant believes that the \$100,000 profit should be credited to Capital Surplus and that it should not be available for dividend declaration. The basis for his reasoning is that the general price level has risen since the asset was originally purchased and, in order to maintain the corporation's assets, a larger amount of fixed capital is now necessary. What is your opinion of this procedure?

19. (a) What is a liquidating dividend? (b) Under what circumstances are such distributions made? (c) How would you recommend that liquidating dividends be recorded in the account?

20. The Byron Corporation, acting within the law of the state of incorporation, paid a cash dividend to stockholders for which it debited Paid-In Surplus. A stockholder protested, saying that such a dividend was a partial liquidation of his holdings. Is this true?

21. The state of incorporation permits the Arden Co. to distribute as dividends the sum of its net profit plus the amount charged against profits for depletion. How do you recommend that dividends be recorded (a) on the books of the corporation and (b) on the books of the investor?

22. The following announcement appeared on the financial page of a newspaper:

"The Board of Directors of the Maxwell Co., at their meeting on June 15, 1953, declared the regular quarterly dividend on outstanding common stock of 50 cents per share and an extra dividend of \$1 per share, both payable on July 10, 1953, to the stockholders of record at the close of business June 30, 1953."

(a) What is the purpose of each of the three dates given in the declaration? (b) When would the stock become "ex-dividend"? (c) Why is the \$1 designated as an "extra" dividend?

23. What methods can be followed in reporting preferred dividends in arrears on the balance sheet?

24. Would you recommend reporting dividends on the income statement or on the surplus statement? Give reasons for your preference.

## EXERCISES

1. Using the data that follow, prepare the capital section of the balance sheet for the Roberts Company.

Common Stock Issued (100,000 shares, par \$10).....	\$1,000,000
Premium on Common Stock.....	140,000
Common Treasury Stock (1,000 shares at cost, \$20) ...	20,000
Preferred Stock (20,000 shares, par \$25).....	500,000
Discount on Preferred Stock .....	25,000
Donated Surplus.....	125,000
Deficit (debit balance in Earned Surplus).....	40,000

2. The Foreman Steel Company wished to reduce the carrying value of its intangible assets from \$350,000 to \$1. To do this, the company decided to reduce the par value of its stock from \$10 to \$7.50 a share. The intangible assets could then be written off against surplus. On June 30 the corporation capital was as follows:

Capital Stock (200,000 shares).....	\$2,000,000
Capital Surplus .....	115,000
Earned Surplus.....	60,000

(a) What entries would be made to reduce intangible assets to \$1 following the plan given above? (b) Assuming that the net income for the

company for the balance of the year is \$62,500, prepare the capital section as it would be shown on the company balance sheet on December 31.

3. What entries should be made for the capital transactions of the Eaton Co. that follow. Stock of this company is no-par with a stated value of \$25. Assume that treasury stock acquisitions are recorded at cost.

- (a) Sold 1,000 shares at \$40 a share.
- (b) Purchased 100 shares on the market at \$34 a share.
- (c) Sold 50 shares of treasury stock for \$38 a share.
- (d) Changed stated value of stock to \$10 a share.

4. The paid-in surplus account of the Hardy Corporation shows the following charges and credits. Give whatever entries may be required to correct the account in 1953:

PAID-IN SURPLUS

1953	1953
Mar. 2 Discount on issue of preferred stock . . . . . 15,000	Jan. 2 Premium on issue of common stock (10,000 shares, par \$50, issued at 65) . . . . . 150,000
Nov. 2 Loss on retirement of common stock (1,000 shares, par \$50, retired at \$75) . . . . . 25,000	Jan. 3 Donated surplus — buildings acquired in governmental grant to company . . . . . 50,000
Dec. 31 Depreciation on buildings acquired through donation . . . . . 2,000	
31 Transfer to capital stock account pursuant to resolution by board of directors raising common stock stated value to \$60 per share . . . . . 90,000	

5. The surplus account for the Van Horn Company discloses the following charges and credits. Give whatever entries may be required to correct the account.

EARNED SURPLUS

Correction in profit of prior period . . . . . 1,500	Jan. 1 Balance . . . . . 64,600
Loss from fire . . . . . 850	Premium on sale of stock . . . 18,500
Write-off of goodwill . . . . . 5,000	Surplus from stock subscription defaults . . . . . 860
Stock dividend . . . . . 20,000	Gain on retirement of preferred at less than issuance price . . . 3,600
Loss on sale of capital assets . . 12,400	Gain on retirement of bonds at less than book value . . . . . 1,250
	Revaluation of buildings:
	Overdepreciation of past periods . . . . . 6,000
	Increase from appraisal . . . . 20,000
	Gain on life insurance policy settlement . . . . . 2,200

**6. The capital accounts for the Burbank Co. on June 30, 1953, follow:**

Capital assigned to capital stock, 100,000 shares, par \$20 . . . . .	\$2,000,000
Capital received in excess of stock par value . . . . .	800,000
Retained earnings . . . . .	4,500,000

Shares of the company's stock are selling at this time at 36. What entries would you make in each case below:

- (a) A stock dividend of 5% is declared and issued.
- (b) A stock dividend of 100% is declared and issued.

**7. The balance sheet of the Brown Corporation shows the following:**

Capital Stock, 20,000 shares, no par, with \$10 stated value . . . . .	\$200,000
Paid-In Surplus . . . . .	350,000
Earned Surplus . . . . .	250,000

A 25% stock dividend is declared, the board of directors authorizing a transfer from Earned Surplus to Capital Stock at the stock stated value, \$10. (a) Give entries to record the declaration and payment of the dividend. (b) What was the book value per share before the dividend declaration and after the issue of the dividend? (c) What was the effect of the issue of the stock dividend on the ownership equity of each stockholder in the corporation?

**8. The dividend declarations and distributions by the Western Co. over a three-year period are listed below. Give the entry required in each case.**

- July 1, 1951. Declared a 5% stock dividend on 1,000,000 shares of common stock, par value \$10. The stock was originally sold at \$12, and surplus is to be charged for the stock dividend with an amount equal to the original stock issuance price.
- July 15, 1951. Distributed the stock dividend declared on June 30, which included fractional warrants for 1,000 shares.
- Sept. 1, 1951. 600 shares were issued for fractional warrants; remaining fractional warrants expired.
- July 1, 1952. Declared a scrip dividend of \$1 per share, payable on January 1, 1953, with interest at the rate of 6%.
- Jan. 1, 1953. Paid scrip dividend.
- July 1, 1953. Declared a dividend of 1 share of South-West common stock on every share of Western Company stock owned. South-West common is carried on the books of the Western Company at a cost of \$1.50 per share.
- July 15, 1953. Distributed South-West common stock to shareholders.

**9. Variety Chain Stores, Inc., with total assets of \$350,000, capital stock outstanding of \$175,000, and earned surplus of \$65,000, sold five of its stores at their book value, \$150,000. This cash is distributed to the present stockholders. What entry should be made?**

**10. The Bell Corporation pays semiannual dividends on \$100, 6% preferred stock regularly on July 1 and January 1. On March 1 the corporation sells 5,000 shares of this stock at 105 plus accrued dividends. (a) Give the entries on the books of the corporation for the sale of the stock on March 1 and for the payment of dividends on the stock on July 1. (b) What entries would be made by an investor acquiring 100 shares and receiving the dividend on this lot?**

## PROBLEMS

**22-1.** The Phillips Processing Co. reports its capital on the balance sheet prepared on December 31, 1953, as follows:

Common stock .....	\$112,000
Surplus .....	76,500
	<hr/>
Total capital. ....	\$188,500
	<hr/>

The common stock account shows the following debits and credits since date of organization in 1948:

*Credits:*

12,000 shares of common, \$10 par .....	\$120,000
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*Debits:*

1,000 shares of common reacquired at 8 .....	8,000
	<hr/>
	\$112,000
	<hr/>

A preferred stock balance was canceled in 1952 when preferred stock was reacquired and formally retired. The surplus account shows the following credits and debits since date of organization:

*Credits:*

Premium on issuance of common .....	\$ 30,000
Gain on sale of unimproved properties .....	11,500
Appraisal of land and buildings at the end of 1953:	
Adjustment for depreciation overstatement, 1948-1953 .....	8,000
Increase in asset book value for appreciation .....	50,000
Net income, 1948-1953 .....	118,500
	<hr/>
	\$218,000

*Debits:*

Loss on bond retirement .....	\$12,500
Discount on issuance of preferred stock .....	10,000
Payment on retirement of preferred stock issue	
in excess of stock par value .....	5,000
Fire loss .....	24,000
Cash dividends .....	90,000
	<hr/>
	\$ 76,500
	<hr/>

*Instructions:* (1) Give whatever entries are required in correcting the capital accounts. (Assume that treasury stock is to be carried at cost.)

(2) Prepare the capital section of the balance sheet for the corporation reflecting corrections in (1) above.

**22-2.** Capital accounts for the Manning-Maxwell Co. on December 31, 1952, are as follows:

## CAPITAL

6% Preferred stock, par \$25, 10,000 shares issued	\$250,000	
Less discount on preferred stock.....	25,000	
		\$ 225,000
Common stock, stated value \$5, 100,000 shares issued.....		500,000
Paid-in surplus from sale of common at 8 .....		300,000
Contributed capital .....		<u>\$1,025,000</u>
Retained earnings .....		415,000
Total capital.....		<u>\$1,440,000</u>

During 1953, the following transactions affected capital:

- Jan. 2. 2,500 shares of preferred stock were called in for retirement at \$26.50 in accordance with call provisions in the preferred contract.
- Mar. 2. 5,000 shares of common stock were reacquired at \$7.50; treasury stock is reported at cost.
- Mar. 30. A 25¢ cash dividend was paid on common stock.
- Apr. 20. Common stock reacquired on March 2 was sold at \$9.00.
- June 30. The semiannual dividend was paid on preferred stock.
- July 1. 2,000 shares of preferred stock were converted into common stock on a 3-for-1 basis in accordance with convertible provisions in the preferred contract.
- Sept. 30. A 25¢ cash dividend was paid on common stock, together with a 5% stock dividend. Common stock is selling on this date at \$9.50, and earned surplus equal to the selling price of the stock issued is transferred to paid-in capital.
- Dec. 31. The semiannual dividend was paid on preferred stock and a special dividend of 50¢ was paid on common stock.
- Dec. 31. Net income for the year, \$212,500, is transferred to retained earnings (debit Profit and Loss).

*Instructions:* (1) Record in journal form the transactions given above.  
 (2) Prepare the capital section for the company as of December 31, 1953.

**22-3.** Capital balances for the Proctor Co. on June 30, 1953, just prior to a corporate readjustment, were as follows:

6% Cumulative preferred stock, par \$50, 10,000 shares issued, dividends 5 years in arrears.....	\$ 500,000
Common stock, par \$10, 100,000 shares issued.....	1,000,000
	<u>\$1,500,000</u>
Deficit from operations.....	165,000
	<u>\$1,335,000</u>

On this date the following action was taken:

- (a) Common stockholders turned in their stock and received in exchange new common stock, 1 share of the new stock being exchanged for

every 5 shares of the old. New stock was given a stated value of \$30 per share.

- (b) One-half share of the new common stock was issued on each share of preferred stock outstanding in liquidation of dividends in arrears on preferred stock.
- (c) The deficit from operations was applied against the surplus arising from the common stock restatement.

Transactions for the remainder of 1953 affecting capital were as follows:

- Nov. 10. 20,000 shares of new common stock were sold at  $32\frac{1}{2}$ .
- Nov. 15. 5,000 shares of preferred stock were called in at \$52.50 plus dividends for  $4\frac{1}{2}$  months at 6%. Stock was formally retired.
- Dec. 31. Net income for the six months ended on this date was \$46,500. (Debit Profit and Loss.) The semiannual dividend was declared on preferred shares and a 50¢ dividend on common shares, dividends being payable January 20, 1954.

*Instructions:* (1) Record in journal form the transactions given above.

(2) Prepare the capital section of the balance sheet for the company as of December 31, 1953.

**22-4.** A condensed balance sheet of the Famous Corporation as of December 31, 1952, appears below:

### FAMOUS CORPORATION

#### BALANCE SHEET

DECEMBER 31, 1952

Assets .....	248,780	Liabilities	29,320
		5% Preferred stock (\$100 par)	50,000
		Common stock (\$50 par)	100,000
		Premium on preferred stock	5,000
		Earned surplus	64,460
	248,780		248,780

Capital stock authorized: 500 shares of 5%, cumulative, nonparticipating preferred stock with a prior claim on assets, and 10,000 shares of common stock.

Information relating to operations of the succeeding three years follows:

	1953	1954	1955
Dividends declared on Dec. 20, payable on Jan. 10 of following year:			
Preferred stock	5% cash	5% cash	5% cash
Common stock	\$1.00 cash 50¢ stock*	\$1.25 cash	\$.50 cash
Credit balance in the profit and loss account after recording income tax liability for year ...	\$21,000	\$12,000	\$19,000

\*Earned surplus is reduced by the par value of the stock dividend.

- 1953: On July 1, land having a book value of \$60,000 was appraised at \$125,000. The board of directors authorized the recording of the appraisal in the accounts.
- 1954: On February 12 depreciation allowances were reduced by \$36,000 following an income tax investigation. Additional income taxes of \$11,000 for prior years were paid. On March 3, 250 shares of common stock were purchased by the corporation at \$46 per share. (Treasury stock is recorded at cost.)
- 1955: On February 28, it was discovered that the merchandise inventory at the end of 1954 had been overstated by \$4,800. On August 10 all of the treasury stock was sold at \$56 per share. By vote of the stockholders on September 12, each share of the common stock was exchanged by the corporation for 3 shares of no-par, each with a stated value of \$20.

*Instructions:* (1) Give the journal entries affecting the capital accounts for the 3-year period ended December 31, 1955. Assume that corrections in profits of prior years are recorded directly in earned surplus.

(2) Prepare the capital section of the balance sheet as it would appear at the end of 1953, 1954, and 1955.

22.5. The Bayview Co. was organized on January 2, 1953, with authorized stock consisting of 5,000 shares of 6%, \$100 par, nonparticipating preferred and 50,000 shares of no-par common. During the first two years of the company's existence, the following transactions took place:

1953

- Jan. 2. Sold 800 shares of common stock at  $5\frac{1}{4}$ .  
2. Sold 3,800 shares of preferred stock at 110.

Mar. 2. Sold common stock as follows:

3,400 shares at 9.  
900 shares at  $9\frac{1}{2}$ .

- July 10. A near-by piece of land, valued at \$216,100, was secured for 800 shares of preferred stock and 14,000 shares of common. (Preferred stock was recorded at 110, the balance being assigned to common.)
- Dec. 16. The regular preferred and a 50-cent common dividend were declared.
28. Dividends declared on December 16 were paid.
31. The profit and loss account showed a credit balance of \$70,000, which was transferred to earned surplus.

1954

- Feb. 27. The corporation reacquired 4,000 shares of common stock at 8. (State law requires that an appropriation of earned surplus be made for the purchase price of treasury stock. Appropriations may be returned to earned surplus upon resale of the stock.)
- June 17. Resold 3,000 shares of treasury stock at  $9\frac{3}{4}$ .
- July 31. Sold all of the remaining treasury stock at 9.
- Sept. 30. The corporation sold 4,000 additional shares of common stock at  $9\frac{1}{4}$ .
- Dec. 16. The regular preferred dividend and a 30-cent common dividend were declared.
28. Dividends declared on December 16 were paid.
31. The profit and loss account showed a credit balance of \$49,900, which was transferred to earned surplus.

*Instructions:* (1) Journalize the foregoing transactions.

(2) Prepare the capital section of the balance sheet as of December 31, 1954.

**22-6.** The following trial balance was taken from the books of the Welcome Manufacturing Company as of April 30, 1953:

ACCOUNT	DEBIT	CREDIT
Cash .....	\$ 310,000	
Accounts receivable .....	800,000	
Raw materials on hand .....	750,000	
Finished goods on hand .....	500,000	
Finished goods out on consignment .....	100,000	
Plant and machinery .....	1,460,000	
Prepaid expenses .....	5,400	
Sales returns and allowances .....	25,000	
Administrative salaries .....	65,000	
Cost of sales .....	2,350,000	
Traveling expenses .....	30,030	
Interest expense .....	10,570	
Accounts payable .....		\$ 175,000
Notes payable .....		100,000
Accrued payroll .....		6,000
Accrued interest payable on 6% bonds .....		10,000
Capital stock — 6% preferred .....		1,000,000
Capital stock — common .....		1,416,000
6% bonds, due June 30, 1961 .....		500,000
Sales .....		2,500,000
Surplus, December 31, 1952 .....		520
Paid-in surplus .....		698,480
	\$6,406,000	\$6,406,000

The following transactions had been completed by the company:

- (1) The company has purchased various lots of its \$100 par value common stock, aggregating 840 shares, at an average price of \$65.50 per share, for \$55,020. In recording these transactions the company has canceled the stock certificates and charged the common stock account with the par value of \$84,000 and credited the paid-in surplus account with the difference of \$28,980 between par and the cash paid therefor.
- (2) Paid-in surplus was previously credited with (a) a premium at \$20 per share on 15,000 shares of common stock issued, and (b) adjustments arising from the appraisal of plant and machinery bought at a receivers' sale, \$398,000.
- (3)  $4\frac{1}{2}\%$  bonds of the face amount of \$250,000 falling due on December 31, 1959, were issued on January 1, 1935, at a 10% discount. To June 30, 1951, \$16,500 of this discount had been charged against profits and as of this date the entire issue of these bonds was retired at par and the unamortized discount charged to Paid-in Surplus.
- (4) A new issue of \$500,000, 6% ten-year bonds was effected as of July 1, 1951, at par. Expenses incurred with respect to this issue in the amount of \$20,000 were charged to Paid-in Surplus.

*Instructions:* Prepare a balance sheet as of April 30, 1953, in which effect has been given to such changes as may be necessary in view of the treatment accorded by the company to the transactions described above. (A.I.A. adapted)

**22-7.** The articles of incorporation of Carlson Manufacturing Company state: "On or before September 1, 1952, and on or before the first day of September in each year thereafter, as long as any shares of preferred stock remain outstanding, the company shall from its profits set aside as a reserve for the retirement of shares of preferred stock an amount equal to not less than 20% of the net earnings of the company for the fiscal year then last expired, after providing for federal income taxes and after deducting the amount of dividends paid on the preferred stock during that fiscal year. The equivalent of the amount so reserved shall be deposited in a special fund to be designated a sinking fund. The amounts so set aside in the sinking fund shall be applied by the company not later than October 31 in the same year to the redemption of outstanding shares of preferred stock called or purchased in the open market at a price not to exceed \$12.50 per share. Preferred stock purchased for the sinking fund shall not be reissued and shall be forthwith canceled."

The following ledger balances and notes are submitted:

	JUNE 30, 1953		SEPTEMBER 30, 1953	
	DEBIT	CREDIT	DEBIT	CREDIT
Cash	\$ 74,000		\$ 90,000	
Other current assets	26,000		28,000	
Fixed assets, less depreciation	150,000		140,000	
Deferred charges	6,000		5,000	
Goodwill	50,000		50,000	
Current liabilities, including all taxes		\$ 10,000		\$ 15,000
7% cumulative preferred stock, par value \$10 per share (authorized 20,000 shares, issued and outstanding 10,000 shares)		100,000		100,000
Common stock, no par value, authorized, issued and outstanding 50,000 shares		100,000		100,000
Capital surplus		30,000		30,000
Earned surplus	...	6,000		66,000
Net profit	.	67,000		11,250
Preferred dividends paid	.. 7,000		1,750	
Preferred stock purchased	.		7,500	
	\$313,000	\$313,000	\$322,250	\$322,250

- (1) The company had a net loss in its fiscal year ended June 30, 1952.
- (2) The company transferred the sinking fund cash to a separate bank account immediately after June 30, 1953, but did not record the transfer on the general books.
- (3) The company regularly pays preferred dividends on March 31, June 30, September 30, and December 31 to holders of record three days before these dates.
- (4) The net profit for each period is found correct as stated.
- (5) The balance in the preferred stock purchased account represents the cost of the following purchases of 7% cumulative preferred stock made for the sinking fund:

July 6, 1953	200 shares @ \$ 9.00 each	\$1,800
Aug. 31, 1953	520 shares @ 10.00 each	5,200
Sept. 7, 1953	40 shares @ 12.50 each	500
	<u>760 shares</u>	<u>\$7,500</u>

- (6) All the preferred stock purchased, except the last 40 shares acquired, was properly canceled under the laws of the state in which the company was incorporated.

*Instructions:* (1) Prepare a balance sheet as of September 30, 1953, showing the particulars of the capital stock and the sinking fund in accordance with the charter provisions.

(2) Prepare a statement of surplus for the fiscal year ended June 30, 1953, and for the following quarter. (A.I.A. adapted)

STANLEY  
BALANCE  
DECEMBER

ASSETS	
Current assets:	
Cash on hand and in banks	\$137,500
Notes receivable, less discounted notes of \$20,000	60,000
Accounts receivable, less allowance of \$8,500	247,800
U. S. Government bonds, plus accrued interest of \$420	42,350
Total current assets	\$ 487,650
Working and trading assets:	
Raw materials and supplies	\$ 92,440
Work in process	110,700
Finished goods, including consigned merchandise of \$21,670	181,320
Total working and trading assets	384,460
Investments in the capital stock of other companies	120,000
Capital assets:	
Land and buildings at cost, less depreciation	\$440,000
Machinery and equipment, less depreciation of \$162,800	332,000
Furniture and fixtures, less depreciation of \$3,200	15,900
Total capital assets	787,900
Sinking fund for retirement of first-mortgage bonds	69,700
Treasury stock	10,000
Prepaid expenses and deferred charges:	
Unexpired insurance	\$ 3,300
Discount on capital stock	15,000
Prepaid advertising	4,600
Prepaid interest on notes discounted	1,800
Total prepaid expenses and deferred charges	24,700
Total assets	\$1,884,410

22-8. The balance sheet of the Stanley Corporation on December 31, 1953, is shown at the bottom of this and the opposite page.

Through inquiry and investigation the following information is obtained with respect to items in the foregoing balance sheet:

- (1) Cash includes \$14,000 in an employees' pension fund.
- (2) The U. S. Government bonds represent \$42,000 face value 2% Treasury bonds valued at cost plus accrued interest. The market value of such bonds on December 31, 1953, was \$44,700.
- (3) Accounts receivable include \$8,400 of advances to employees.
- (4) Accounts receivable also include \$15,000 advanced to suppliers of raw materials for materials neither received nor in transit. Since the placement of the orders, which are not subject to cancellation, the replacement cost of the materials has declined to 70% of the commitment price.

## CORPORATION

### SHEET

31, 1953

#### LIABILITIES

##### Current liabilities:

Accounts payable — trade	\$273,000
Accrued payrolls and interest (exclusive of interest on installment notes payable to bank)	15,620
Reserve for federal income and excess profits taxes (net of claim for income tax refund of \$8,000)....	72,000
Reserve for other taxes	14,300
Installment notes payable to bank, due \$12,000 on first of each month beginning Jan. 1, 1954, and accrued interest of \$4,500	124,500
Total current liabilities	\$ 499,420
Dividends payable January 16, 1954	6,000
Funded debt:	
5% First-mortgage bonds due January 1, 1970	350,000

#### CAPITAL

##### Capital stock:

Preferred, 2,000 shares authorized; 1,800 shares issued	\$180,000
Common, 3,000 shares authorized; 2,500 shares issued	250,000
Subscriptions to common stock, 400 shares	22,000
Total capital stock	\$452,000
Earned surplus:	
Reserve for employees' pensions	\$ 14,000
Free and available for dividends	159,990
Total earned surplus	173,990
Capital surplus	403,000
Total capital stock and surplus	\$1,028,990
Total liabilities and capital	\$1,884,410

- (5) Raw materials and supplies are stated at amounts lower than market and include invoices received, in the amount of \$7,000, for materials shipped f.o.b. point of shipment and in the hands of common carriers on December 31, 1953. Excluded are \$9,000 of raw materials received on December 28, 1953, for which invoices are dated January 15, 1954.
- (6) Work in process, which is valued at actual cost of direct materials and direct labor plus a normal charge for manufacturing overhead based upon company experience, is less than market value.
- (7) Finished goods are similarly valued, except for merchandise in the hands of consignees, which is priced and billed on memorandum at 110% of cost. Finished goods valued at \$140,000 are pledged against installment notes payable to bank.
- (8) Of the capital stock investments in other companies, \$95,000 represents investments at cost in 50% or more of the stock of subsidiary companies. The realizable values of such investments exceed cost, and income therefrom is recorded as dividends are received.
- (9) The remaining investments represent small stock interests considered necessary for business operations, having an aggregate market value of \$21,800 at December 31, 1953.
- (10) The land and buildings account, when analyzed, discloses the following:
 

Cost of land . . . . .	\$ 75,000
Depreciated cost of buildings as at January 1, 1948, established by revenue agent's report dated July 7, 1949, adjusted for subsequent additions and re- tirements . . . . .	669,500
Accumulated depreciation since January 1, 1948 . . .	304,500
- (11) The sinking fund consists of \$19,700 in cash and \$50,000 of the company's own first-mortgage 5% bonds.
- (12) The treasury stock represents 100 shares of preferred stock valued at par and acquired for resale to employees.
- (13) The preferred stock has a \$100 par value. It is cumulative at the rate of 6%, and is callable after July 1, 1955, at 105% of par value plus accumulated and unpaid dividends, if any. The 1,800 shares issued include the 100 shares in the treasury.
- (14) The common stock also has a \$100 par value. The subscriptions to 400 shares of common stock are stated in the balance sheet net of \$18,000 representing receivables from subscribers on their stock subscription contracts.
- (15) The reserve for employees' pensions of \$14,000 offsets the amount of cash in the employees' pension fund. This fund was set up in 1953 as a result of a contract with employees.
- (16) The current earned surplus account dates back to July 1, 1944, on which date a voluntary reorganization served to eliminate an operating deficit.

*Instructions:* Prepare in corrected form a revised balance sheet as of December 31, 1953, based upon the preceding information. (A.I.A. adapted)

**Surplus****Appropriations; The Surplus Statement****RESERVES**

It has already been indicated that the term *reserve* is employed in a variety of different senses in accounting practice. It has been used in the following ways:

(1) *As a valuation account.* The reserve designation is frequently employed to report an offset or valuation account related to a balance sheet item. For example, deductions may be required from the face amount of assets in arriving at the amounts that they are expected to realize, as in the case of marketable securities, receivables, or inventories. When such reductions are related to current revenue, they are recorded by charges to expense accounts and credits to asset valuation accounts. Or, deductions may be required from the face amount of assets in the recognition of cost expirations, as in the case of properties subject to depreciation, depletion, or amortization. When such reductions are related to current revenues, they too are recorded by charges to expense balances and credits to asset valuation accounts. In preparing the balance sheet, valuation reserves are subtracted from the related balance sheet items. Such reserves are ultimately applied in the accounts against the items to which they relate. A reserve for bad debts is used to absorb accounts that prove to be uncollectible. A reserve to reduce marketable securities to market value is applied against this item when the asset is sold; a reserve for depreciation is applied against the property item when the latter is disposed of or scrapped. It was suggested earlier that the term *allowance* should be substituted for the term *reserve* in designating balance sheet valuation elements.

(2) *As an estimate of a liability of uncertain amount.* The reserve title is frequently employed to designate an estimated liability. Estimates may be required in reporting such items as tax obligations, premium claims outstanding, claims under guarantees for services and replacements, and obligations under pension plans. When such claims are related to current revenue, they are recorded by charges to appropriate expense balances and credits to liability accounts. The liabilities mentioned are ultimately canceled through payment. Designation of the accounts in this class as *estimated liabilities* rather than as *reserves* would serve to clarify the nature of the items presented.

(3) *As an appropriation of retained earnings.* The reserve title is used to indicate that a portion of surplus has been appropriated for

some special purpose in accordance with legal or contractual requirements or as a result of specific authorization on the part of the board of directors. The appropriation of surplus does not change the total corporate capital. Amounts are merely transferred from a surplus account that might otherwise be used as a basis for dividends to surplus accounts that are not to be considered as available. The appropriation of surplus is no guarantee that cash or any other specific asset will be available in carrying out the purpose that may be designated by the appropriation. Resources represented by surplus may have been applied to the enlargement of plant, to the increase of working capital or perhaps to the increase of cash, or possibly to the retirement of corporate indebtedness. The appropriation of surplus merely insures the retention by the business of net assets represented by that surplus; if assets are to be made available for a particular purpose, special action relative to asset use would be called for. When the purpose of a surplus appropriation has been served, the appropriation balance is returned to the account from which it originated. The purposes served by surplus appropriations are considered in detail in the following pages.

It was indicated in an earlier chapter that the American Institute Committee on Accounting Procedure holds that the use of the term *reserve* to indicate the retention of assets comes closest to its popular meaning. Accordingly, the Committee recommends that the term *reserve* be limited to surplus appropriations and that any alternate use of the term on the accounting statements be discontinued.<sup>1</sup>

### **SURPLUS APPROPRIATIONS**

Surplus appropriations may be classified under the following headings:

(1) *Appropriations to reflect legal restrictions on the use of surplus.* Laws of the state of incorporation may provide for the maintenance of legal capital through restriction in the use of surplus as a basis for dividends upon the reacquisition of a company's own stock. The surplus restriction may be given effect in the accounts by the appropriation of surplus.

(2) *Appropriations to reflect contractual restrictions on the use of surplus.* An agreement with creditors may provide for the retention of earnings within the company as a means of protecting the creditors and assuring payment of their claims. The restriction in the use of surplus as a basis for dividends may be indicated in the accounts by the appropriation of surplus.

<sup>1</sup> *Accounting Research Bulletin No. 34*, "Recommendation of Committee on Terminology - Use of the Term 'Reserve'," October, 1948 (New York: American Institute of Accountants), pp. 271-274.

(3) *Appropriations to reflect discretionary action by the board of directors in the presentation of earned surplus.* The board of directors may authorize that a portion or all of the surplus be presented in a manner that will disclose the actual use in the business at the present time or the planned use in the future of this part of the stockholders' equity. Discretionary action, then, on the part of the board of directors may be the basis for surplus appropriations in the accounts.

A number of appropriated surplus accounts and the purposes for which such balances are established are listed below:

Appropriated Surplus Account	Purpose
<i>Appropriations to reflect legal restrictions on the use of surplus:</i>	
Reserve for Purchase of Treasury Stock	To retain earnings equal to the amount paid on the reacquisition of stock, thus maintaining capital at original legal or stated balance.
<i>Appropriations to reflect contractual restrictions on the use of surplus:</i>	
{ Reserve for Bonded Indebtedness Reserve for Bond Sinking Fund	To retain earnings to provide additional security to bondholders or for use in connection with a sinking fund plan for bond redemption.
{ Reserve for Redemption of Preferred Stock Reserve for Preferred Stock Redemption Fund	To retain earnings for use in the retirement of preferred stock or for use in connection with a sinking fund plan for stock retirement.
<i>Appropriations to reflect discretionary action by the board of directors in the presentation of earned surplus:</i>	
Reserve for Contingencies	To retain earnings for use in meeting possible future losses.
Reserve for Possible Inventory Decline	
Reserve for Self-Insurance	
Reserve for Increased Working Capital	To appropriate surplus where net assets resulting from earnings have been applied to some particular business purpose and thus are unavailable for dividends.
Reserve for Increased Investment in Plant	

The various appropriations listed are described in the following paragraphs.

**SURPLUS  
APPROPRIATIONS  
RELATING TO STOCK  
REACQUISITIONS**

The segregation of earnings unavailable for distribution as a result of the reacquisition of a company's own stock is recorded by a charge to Earned Surplus and a credit to an appropriately titled appropriated surplus account. When the treasury stock is resold or when it is formally retired with a reduction in the corporate legal capital in accordance with the law and the surplus restriction is removed, the appropriated surplus balance may be returned to surplus by a charge to the appropriation account and a credit to Earned Surplus. To illustrate, assume the acquisition by a corporation of its own stock and the subsequent resale of this stock. Retained earnings of \$100,000 are restricted by law from use for dividends during the period of treasury stock holdings. The entries that are made for the appropriation and for its subsequent cancellation follow:

Earned Surplus.....	100,000
Reserve for Purchase of Treasury Stock (or Earned Surplus Restricted by Purchase of Treasury Stock).....	100,000
Reserve for Purchase of Treasury Stock .....	100,000
Earned Surplus.....	100,000

**SURPLUS  
APPROPRIATIONS  
RELATING TO CORPO-  
RATE OBLIGATIONS**

The appropriation of earnings required by an agreement with creditors is recorded by a charge to surplus and a credit to an account reflecting the appropriation. Upon settlement with the creditor group and the removal of the restriction upon surplus, the surplus appropriation is returned to surplus. To illustrate, assume that the corporation agrees to restrict retained earnings of \$5,000,000 from dividend distribution during the life of a bond issue. Entries to record the surplus restriction when the loan is made and the ultimate expiration of the restriction when the loan is liquidated follow:

Earned Surplus.....	5,000,000
Reserve for Bonded Indebtedness (or Earned Surplus Restricted by Terms of Agreement with Bondholders) .....	5,000,000
Reserve for Bonded Indebtedness .....	5,000,000
Earned Surplus.....	5,000,000

When the agreement with creditors provides for the periodic appropriation of earnings during the life of the obligation, entries similar to the first entry above would be made each period.

The appropriation of earnings may be accompanied by the segregation of assets in a special fund to be used in the liquidation of the obligation at maturity. The establishment of the fund may be voluntary or it may be required by contract. A surplus reserve that is accompanied by the establishment of a sinking fund is said to be *funded*. This practice results not only in limitations of dividends but also in the accumulation of corporate resources in a fund to meet the requirements that form the basis for dividend limitation. Liquidation of the obligation by means of the sinking fund and the termination of the contract with creditors releases previously existing surplus limitations, and the appropriated surplus balance may be returned to a free status. It may be observed, however, that when proceeds from a bond issue are used for expansion purposes and when resources from profitable operations of subsequent periods have been used to retire such an indebtedness, the expansion has in effect been financed by earnings. Under these circumstances, the board of directors may choose to report retained earnings equivalent to the amount applied to expansion as appropriated surplus under the designation "Reserve for Increased Investment in Plant," or it may choose to effect a permanent capitalization of such retained earnings by means of a stock dividend or other appropriate action.

To illustrate the foregoing, assume that a corporation borrows \$1,000,000 for plant expansion purposes. Each year for a 10-year period, earnings of \$100,000 are appropriated and at the same time cash is transferred to a sinking fund to be used for the liquidation of bonded indebtedness at its maturity in accordance with requirements of the bond issue. The entry for the surplus appropriation at the end of each year is:

Earned Surplus	100,000
Reserve for Bonded Indebtedness (or Earned Surplus Restricted by Terms of Agreement with Bondholders)	100,000

When the obligation is retired at the end of the tenth year and the surplus restriction is no longer effective, the following entry is made:

Reserve for Bonded Indebtedness	1,000,000	
Earned Surplus		1,000,000

Assuming that the board of directors now authorizes that a portion of retained earnings equal to the amount applied to plant expansion be reported as having been employed for this purpose, the following entry would be required:

Earned Surplus . . . . .	1,000,000	
Reserve for Increased Investment in Plant . . . . .		1,000,000

Assume, instead, that the board of directors declares a stock dividend of \$100,000 so that earnings equal to the amount applied to plant expansion are permanently capitalized. This action would call for the following entry:

Earned Surplus . . . . .	1,000,000	
Capital Stock . . . . .		1,000,000

### **SURPLUS APPROPRIATIONS RELATING TO STOCK REDEMPTION PROGRAMS**

Surplus may be appropriated at regular intervals as part of a plan for the use of resources arising from earnings to retire shares of stock outstanding, frequently the entire preferred stock issue. The appropriation of earnings in connection with such a plan may be required as a result of an agreement with stockholders or it may be voluntary and established at the discretion of the board of directors. Stock may be reacquired by disbursements out of cash or disbursements out of a sinking fund established by regular transfers from the cash account. In either case, upon the ultimate retirement of outstanding stock, the board of directors may authorize the return of the appropriated surplus balance to earned surplus. However, it should be observed that retained earnings now take the place of the capital stock equity previously reported. In recognition of this factor, the board of directors may choose to designate these earnings as applied to the retirement of a previously existing stockholders' equity; on the other hand, it may choose to effect a permanent capitalization of such retained earnings by means of a stock dividend or by other appropriate action.

### **SURPLUS APPROPRIATIONS FOR POSSIBLE FUTURE LOSSES**

The establishment of reserves may be authorized by the board of directors in anticipation of possible future losses. Three examples of such reserves are described in the following paragraphs: (1) the general purpose contingency reserve, (2) the reserve for possible inventory decline, and (3) the reserve for self-insurance.

(1) *General Purpose Contingency Reserve.* Managements have frequently authorized the establishment of general reserves to cover possible future losses of a contingent nature. In view of the contingent nature of the loss, such an authorization by management would call for the establishment of a reserve by a charge to surplus and not by a

charge to revenue. The reserve, thus, must be viewed as an appropriation of surplus. In the event that the contingency fails to materialize, the board of directors may authorize cancellation of the surplus appropriation and a return of the balance in the appropriation account to surplus. If the contingency does materialize, the appropriation balance would also be returned to surplus; the loss would be separately recognized in the period in which it materialized as a charge to revenue or as a direct charge to Earned Surplus, whichever is appropriate.

The procedure that was described is illustrated in the example that follows. A reserve for contingencies of \$100,000 is established by a company at the end of 1951 for possible future declines in the value of marketable securities; a decline in the market value of the securities takes place in 1953, and securities are sold in this year at a loss of \$65,000. The following entries record the appropriation of earned surplus in anticipation of the possible decline in the value of securities, the sale of the securities, and the return of the appropriated surplus balance to earned surplus.

1951	Earned Surplus	100,000	
	Reserve for Contingencies (or Earned Surplus Restricted for Possible Decline in Value of Marketable Securities)		100,000
1953	Cash	135,000	
	Loss on Sale of Marketable Securities (or Earned Surplus)	65,000	
	Marketable Securities		200,000
	Reserve for Contingencies	100,000	
	Earned Surplus		100,000

It should be observed that the establishment of the reserve in 1951 was not a proper charge to revenue of that period since the reserve was related not to losses sustained but to possible contingent losses of the future. The reserve that is established under these circumstances can only be considered a part of surplus. To charge 1951 revenue with such a reserve would be to understate net income for the year; income of \$100,000 would by-pass recognition on the income statement. Having established the reserve by a charge to surplus, it would be improper to charge the reserve in 1953 with the losses resulting from the sale of securities. Such a practice would serve to overstate the profit for 1953; losses charged to the reserve would by-pass recognition on the income statement or the earned surplus statement. The surplus appropriation is returned to earned surplus, where it will serve to absorb losses that were anticipated in its establishment. The reserve procedure

has served to withhold resources from possible distribution in the form of dividends until the contingency has been resolved.

In considering general purpose contingency reserves, the American Institute Committee on Accounting Procedure has stated:

- ... general contingency reserves, such as those created:
- (a) for general undetermined contingencies, or
  - (b) for a wide variety of indefinite possible future losses, or
  - (c) without any specific purpose reasonably related to the operations for the current period, or
  - (d) in amounts not determined on the basis of any reasonable estimates of costs or losses,
- are of such a nature that charges or credits relating to such reserves should not enter into the determination of net income.<sup>1</sup>

Accordingly, the Committee has recommended the following procedures with respect to the general contingency reserves named:

- (a) Provisions for such reserves should not be included as charges in determining net income.
- (b) When such a reserve is set up it should be created preferably by a segregation or appropriation of surplus; . . .
- (d) Costs or losses should not be treated as charges to such reserves and no part of such a reserve should be transferred to income or in any way used to affect the determination of net income for any year.
- (e) When such a reserve or any part thereof is no longer considered necessary it should be restored to surplus . . .<sup>2</sup>

(2) *Reserve for Possible Inventory Decline.* When inventories are acquired in a high-price period, company managements have frequently authorized the establishment of reserves for losses feared or anticipated in future periods. It will be recalled that valuation accounts reducing inventory costs to a lower market were established by charges to current

<sup>1</sup>*Accounting Research Bulletin No. 28, "Accounting Treatment of General Purpose 'Contingency Reserves',"* July, 1947 (New York: American Institute of Accountants), p. 232.

<sup>2</sup>*Ibid.*, pp. 232-233. It might be mentioned that Bulletin No. 28 permits the establishment of the reserve by two methods: (1) a charge to surplus as indicated above and (2) an appropriation of net income reported on the income statement. When method (2) is used, the Committee indicates that net income should first be determined and so designated, the reserve provision should then be clearly captioned as an appropriation of net income and deducted, and the balance or final figure should then be so captioned as to indicate clearly that it is not the entire net income. However, in *Accounting Research Bulletin No. 35, "Presentation of Income and Earned Surplus,"* issued in October, 1948, on page 275 the Committee rejects the second method of presentation in view of the fact that "charges and credits displayed in accordance with the second method have been included in many income statements in a manner and with wording which has occasioned misconceptions as to whether the earnings for the period were the amounts captioned as net income or were the final and more prominent amounts shown on the income statements after the deduction or addition of such charges and credits." The Committee concludes that "the possibility of misconception in this respect will be minimized by the adoption of the first method in all cases."

revenue; valuation accounts providing for inventory obsolescence, deterioration, and similar losses already incurred would be established by similar entries. The establishment of a reserve for possible future inventory decline, however, cannot be considered an inventory valuation account; such a reserve would have to be considered a segregation of surplus. Accordingly, such a reserve should be established by a charge to surplus, and the appropriated balance should ultimately be returned to surplus; no costs or losses should be charged to the reserve, nor should any part of the reserve be transferred to income. The emergence of a loss on inventories requires separate recognition in the period in which it is measurable. Accounting for an appropriation for possible inventory decline, then, is the same as that described for the general purpose contingency reserve in the preceding section.

The American Institute Committee on Accounting Procedure in Accounting Research Bulletin No. 31 on "Inventory Reserves" makes the following statements:

... The committee has previously recognized the character of the income statement as a tentative installment in the long-time financial results, and is aware of the tendency to exaggerate the significance of the net income for a single year. Nevertheless, there still exists the responsibility for determining net income as fairly as possible by sound methods consistently applied, and the duty to show it clearly.

... In accomplishing this objective, it has been deemed desirable to provide, by charges in the current income statement, properly classified, for all foreseeable costs and losses applicable against current revenues, to the extent that they can be measured and allocated to fiscal periods with reasonable approximation. In applying this rule, inventories on hand or contracted for should be priced in accordance with principles recently stated by the committee.<sup>1</sup> When such an inventory which has been priced in accordance with those principles is further written down by a charge to income, either directly or through the use of a reserve, current costs are not properly matched with applicable revenues and future charges are correspondingly reduced. This process may result in the shifting of profits from one period to another without accounting justification. The committee is on record that reserves should not be created for the purpose of equalizing reported income.

... The committee is therefore of the opinion that inventory reserves, such as those created:

- (a) for possible future inventory losses on inventories not on hand or contracted for, or
- (b) without regard to any specific loss reasonably related to the operations of the current period, or

<sup>1</sup>These rules are summarized in *Accounting Research Bulletin No. 29*. See Chapter 9, pages 243 and 251, for references to this bulletin.



(c) for the purpose of reducing inventories other than to a basis which is in accordance with generally accepted accounting principles, are of such a nature that charges or credits relating to such reserves should not enter into the determination of net income and that they should not be used to relieve the income account of any year.<sup>1</sup>

(3) *Reserve for Self-Insurance.* A company may face certain risks but may not obtain insurance on the theory that the self-absorption of losses will prove less expensive in the long run than the cost of insurance protection from an insurance company. When a course of self-insurance is followed, reserves may be authorized in anticipation of losses that may have to be absorbed.

When self-insurance is considered to involve definitely accruing obligations, the accounting for such a course of action would call for the recognition of liabilities through charges to periodic revenues; liability balances would absorb losses as they emerge. However, a self-insurance plan related to losses or casualties that cannot be considered to accrue would call for surplus appropriations; this procedure would require recognition of the loss as a charge to revenue at the time it emerges.

To illustrate, assume that a construction company decides to assume the risks for workmen's compensation and authorizes the establishment of a reserve for costs emerging from this policy. The company is satisfied that it can make reliable estimates of the amounts payable under compensation claims arising from employee accidents. Under these circumstances, it is appropriate to recognize the estimated amounts payable under compensation claims at the end of each period by a charge to an expense account and a credit to an estimated liability account; when payments are made in subsequent periods, the liability balance is debited and cash is credited. If the claims estimate proves to be inadequate or excessive, appropriate correcting entries would be required. A sinking fund may be established in connection with a self-insured compensation plan for payments to be made under the plan.

On the other hand, assume that a company with a number of branches throughout the country decides to act as self-insurer for any fire losses and authorizes the establishment of a reserve for possible fire losses. Fire damage cannot be considered to accrue; it is a contingency that may or may not occur. A reserve for fire losses could under no circumstances be considered an asset valuation account or a liability balance. Until a fire occurs no loss has been incurred; the

<sup>1</sup>Accounting Research Bulletin No. 31, "Inventory Reserves," October, 1947 (New York: American Institute of Accountants), pp. 256-257.

absence of such a loss in one period does not increase the vulnerability to such a loss in the next. Accordingly, any reserve for fire losses must be viewed as a part of surplus — retained earnings available to meet a possible future contingency. Such a reserve balance must be established by a charge to surplus; to charge revenue would be to by-pass profit and loss in the recognition of a capital increase. Fire losses would be recorded by charges to appropriate loss accounts and credits to the property balances. Reserve balances are returned to earned surplus to absorb losses that ultimately reach this account. When the reserve account is credited for insurance premiums that would otherwise be paid and is charged for transfers to earned surplus based upon fire losses sustained, the balance in the account will reflect the savings accruing to the company as a result of the self-insurance plan. The surplus reserve may be funded so that cash will be available for asset replacement requirements.

The two procedures described are illustrated below. It is assumed that a sinking fund is maintained in each case to meet losses that may emerge under the self-insurance plans.

Transaction	Self-Insurance Considered to Involve Accruable Losses	Self-Insurance Considered to Involve Nonaccruable Losses
(a) Estimated liability under workmen's compensation self-insurance plan. (b) Surplus appropriation under fire loss self-insurance plan.	(a) Workmen's Compensation      20,000 Estimated Claims under Workmen's Compensation Plan (Self-Insurance)      20,000	(b) Earned Surplus      20,000 Reserve for Self-Insurance Fire Loss      20,000
Establishment of sinking fund to meet self-insurance plans.	Workmen's Compensation Cash Fund      20,000 Cash      20,000	Fire Loss Cash Fund      20,000 Cash      20,000
(a) Workmen's compensation paid, \$15,000. (b) Fire loss, asset book value, \$15,000; building replacement cost, \$23,500, paid \$15,000 from sinking fund and \$8,500 from regular cash balance.	(a) Estimated Claims under Workmen's Compensation Plan (Self-Insurance)      15,000 Workmen's Compensation Cash Fund      15,000	(b) Fire Loss      15,000 Allowance for Depreciation of Buildings      6,500 Buildings      21,500 Reserve for Self-Insurance — Fire Loss.....      15,000 Earned Surplus.....      15,00 Buildings      23,500 Fire Loss Cash Fund.....      15,00 Cash      8,50

**SURPLUS APPROPRIATIONS TO DESCRIBE BUSINESS PURPOSES SERVED BY RETAINED EARNINGS**

Corporate officials may authorize appropriations to show the use of retained earnings within the business. For example, assume that profitable operations over a period of years have enabled a company to make significant expansion in its plant and equipment. Instead of continuing to report total accumulated earnings as earned surplus, which may be interpreted by stockholders as amounts available for distribution as dividends, the company may authorize transfers from earned surplus to an appropriated surplus account that describes the utilization of past earnings for plant and equipment expansion purposes. A permanent increase in a company's working capital position may likewise suggest an appropriation of earnings. Such appropriations may be carried forward indefinitely. On the other hand, the company may wish to effect a permanent capitalization of such retained earnings. Accordingly, appropriated surplus balances may be returned to earned surplus; transfer of earned surplus to paid-in capital can then be effected by means of a stock dividend or other appropriate action.

**OBJECTIONS TO SURPLUS APPROPRIATION PROCEDURES**

The American Accounting Association Committee on Concepts and Standards Underlying Corporate Financial Statements has taken issue with the general practice of earmarking surplus through the appropriation procedure. It feels that such a practice may serve to confuse and mislead readers of the statement. When surplus has been retained as a matter of managerial policy for purposes of prospective or accomplished reinvestment of earnings or to provide for possible future losses, the Committee feels that such objectives can best be explained by properly descriptive narrative material accompanying the statements. The Committee points out that managerial policy arises from a number of complex factors; the equity section of the balance sheet is hardly the most practical vehicle for the description of such policy. When surplus is retained as a result of legal or contractual requirement, the facts would best be displayed in footnote or narrative form where permissible. In those instances where a formal surplus appropriation is required by law or contract, the Committee would recommend abandonment of the term "reserve," whose specialized meaning here may be at variance with public usage, and would substitute terminology that adequately describes the restrictions upon the use of retained earnings.

In considering the problems presented by reserves and retained income, the Committee submits the following recommendations:

1. The term "reserve" should not be employed in published financial statements of business corporations.

2. The "reserve section" in corporate balance sheets should be eliminated and its elements exhibited as deduction-from-asset, or liability, or retained income amounts.

3. Appropriations of retained income should not be made or displayed in such a manner as to create misleading inferences.

(a) Appropriations of retained income which purport to reflect managerial policies relative to earnings retention are ineffective, and frequently misleading, unless all retained income which has in fact been committed to operating capital is earmarked. Partial appropriation fosters the implication that retained earnings not earmarked are available for distribution as dividends.

(b) Appropriations of retained income required by law or contract preferably should be disclosed by footnote. If required to be displayed as balance sheet amounts, such appropriations should be included in the proprietary section.

(c) Appropriations of retained income reflecting anticipated future losses, or conjectural anticipated future losses, or conjectural past or present losses (when it is not established by reasonably objective evidence that any loss has been incurred) preferably should be disclosed by footnote. If displayed as balance sheet amounts, such appropriations should be included in the proprietary section.

(d) In any event, whenever appropriations are exhibited in a balance sheet, the retained income (excluding amounts formally capitalized) should be summarized in one total.

4. The determination of periodic earnings is not affected by the appropriation of retained income or the restoration of such appropriated amounts to unappropriated retained income.<sup>1</sup>

There can be little objection to the position taken by the American Accounting Association Committee.

## THE SURPLUS STATEMENT

All persons who desire to be completely informed on the financial position and the financial progress of a corporation will require full information accounting for the change in corporation surplus balances on successive balance sheets. When the change in surplus for the period can be explained by simply considering profits and dividends, a reconciliation of surplus can be provided in the surplus section of the balance sheet. Ordinarily, however, there are a number of factors to be recognized in accounting for the change in surplus. When this is the case, a separate surplus statement is prepared.

The nature and form of the surplus statement depends upon the method of treating extraordinary items and corrections. When these items are not reported on the income statement but are considered as

<sup>1</sup>*Supplementary Statement No. 1, "Reserves and Retained Income,"* December 31, 1950 (Urbana: American Accounting Association), statement reprinted in *The Accounting Review*, April, 1951, pp. 152-156.

affecting surplus directly, this detail is reported on the surplus statement. The surplus statement is relieved of considerable detail when the income statement includes extraordinary items and corrections. When changes have taken place in paid-in and revaluation surplus balances, separate statements may be prepared to explain the changes in each of these classes of surplus.

Although the forms of the surplus statements vary greatly, the following rules should be observed in surplus statement construction:

- (1) Paid-in, appraisal, and earned surplus changes should be displayed separately.
- (2) The opening figures should agree with the balance sheet balances at the beginning of the period; the final figures should agree with the ending balances.
- (3) Earned surplus should be clearly divided into appropriated and unappropriated sections.
- (4) Items should be classified and listed in some consistent order.

On this and the following page are illustrated the income statement in current operating performance form, that is, in the form not including extraordinary items and corrections, and the paid-in surplus statement and the earned surplus statement accompanying this income statement.

### GENERAL MANUFACTURING COMPANY

#### INCOME STATEMENT

FOR YEAR ENDED DECEMBER 31, 1953

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Sales .....	\$1,500,000
<hr style="border-top: 1px dashed black;"/>	
Net income for year .....	\$ 120,000

---

#### Income Statement in Current Operating Performance Form

### GENERAL MANUFACTURING COMPANY

#### PAID-IN SURPLUS STATEMENT

FOR YEAR ENDED DECEMBER 31, 1953

---

Balance of surplus arising from sale of no-par stock in excess of stated value prior to January 1, 1953 .....	\$260,000
Add increase arising from sale of treasury stock, cost \$20,000, at \$36,000 in 1953 .....	16,000
<hr style="border-top: 1px dashed black;"/>	
Total paid-in surplus, December 31, 1953, per balance sheet .....	\$276,000

---

#### Paid-In Surplus Statement to Accompany an Income Statement in Current Operating Performance Form

With a revaluation surplus balance, a separate statement could be prepared to summarize changes in this class of surplus.

## GENERAL MANUFACTURING COMPANY

## EARNED SURPLUS STATEMENT

FOR YEAR ENDED DECEMBER 31, 1953

## Appropriated earned surplus:

Reserve for purchase of treasury stock, balance, January 1, 1953 .....	\$60,000	
Deduct return to earned surplus of earnings previously restricted upon sale of treasury stock in 1953 (see below) .....	20,000	\$ 40,000

Appropriation for contingencies, balance, January 1, 1953 .....	\$50,000	
Add appropriation in 1953 (see below) ....	35,000	85,000

Total appropriated earned surplus, December 31, 1953. .... \$125,000

## Unappropriated earned surplus:

Balance, January 1, 1953 .....	\$200,000	
Add: Net income for 1953 per income statement ...	120,000	
Gain on sale of securities .....	35,000	
Transfer from appropriation for purchase of treasury stock (see above) .....	20,000	
		<u>\$375,000</u>

Deduct: Loss on sale of equipment .....	\$ 5,000	
Organization costs written off ...	40,000	
Corrections in profits of prior periods:		
Understatements of depreciation charges, 1950-1952 .....	20,000	
Cash dividends .....	50,000	
Transfer to appropriation for contingencies (see above) .....	35,000	150,000

Total unappropriated surplus, December 31, 1953. .... 225,000

Total earned surplus, December 31, 1953, per balance sheet ..... \$350,000

**Earned Surplus Statement to Accompany an Income Statement  
in Current Operating Performance Form**

Assuming preparation of the income statement in "all-inclusive" form, this statement and the accompanying surplus statement might be prepared as follows:

## GENERAL MANUFACTURING COMPANY

## INCOME STATEMENT

FOR YEAR ENDED DECEMBER 31, 1953

Sales.....	\$1,500,000
<hr/>	
Net income for year.....	\$ 120,000
Add extraordinary gains, other increases:	
Gain on sale of securities.....	35,000
	<hr/>
	\$ 155,000
Deduct extraordinary losses, other decreases:	
Loss on sale of equipment.....	\$ 5,000
Organization costs written off.....	40,000
Corrections in profits of prior periods:	
Understatement of depreciation charges, 1950-1952	20,000      65,000
	<hr/>
Increase in earned surplus. ....	\$ 90,000
	<hr/>

## Income Statement in All-Inclusive Form

## GENERAL MANUFACTURING COMPANY

## SURPLUS STATEMENT

FOR YEAR ENDED DECEMBER 31, 1953

	PAID-IN SURPLUS	EARNED SURPLUS	
		Appro- priated	Unappro- priated
Balances, January 1, 1953.....	\$260,000	\$110,000	\$200,000
Sales of treasury stock, cost \$20,000, for \$36,000 in 1953.....	16,000		
Increase in earned surplus for year per income statement.....			90,000
Cash dividends.....			(50,000)
Earnings appropriated for contingencies		35,000	(35,000)
Return to earned surplus of earnings previously restricted through owner- ship of treasury stock.....		(20,000)	20,000
Balances, December 31, 1953, per balance sheet.....	\$276,000	\$125,000	\$225,000

Surplus Statement to Accompany Income  
Statement in All-Inclusive Form

If there were a revaluation surplus balance, a separate column could be included on the surplus statement to summarize changes in this class of surplus.

**CAPITAL ON THE  
BALANCE SHEET**

The principles of balance sheet form and content discussed in preceding chapters are illustrated in the balance sheet for the General Manufacturing Company on pages 706 and 707. Special attention is directed to the balance sheet capital section, which is related to the supporting income and surplus statements just illustrated.

The following points in the capital section of the balance sheet deserve special attention:

- (1) The various classes of capital stock are reported separately and described in detail, and information is offered concerning amounts authorized, issued, and held in the treasury.
- (2) The first preferred stock is convertible into common at the option of the stockholders on the basis of three shares of common for each share of first preferred. Shares of unissued common stock have been set aside to provide for such conversions.
- (3) The items making up paid-in surplus and appropriated earned surplus are reported individually, although one frequently finds related balances combined and single totals reported for these classes of surplus on the balance sheet.
- (4) In complying with legal requirements, the corporation has reported earned surplus equivalent to the cost of common stock reacquired and still held as a reserve for treasury stock.

A reference to the notes accompanying financial statements would appear at the bottom of each accounting statement.

**SPECIAL  
MEASUREMENTS  
BASED ON CORPORATE  
STATEMENTS**

Reference is frequently made to two measurements that are based upon corporate statement data: (1) *book value per share*, as indicated by the balance sheet and (2) *earnings per share*, as indicated by the income statement. These measurements are of particular interest to stockholders, both present and prospective. The nature of these measurements and the problems involved in their calculation are described in the remaining pages of this chapter.

**BOOK VALUE  
PER SHARE**

Share book value is the dollar equity of each share in corporate capital. It is the amount that would be paid to each shareholder assuming corporate liquidation and the realization of assets in amounts equal to values reported on the books.

When only one class of stock is outstanding, the calculation of book value is a simple matter: total corporate capital is divided by the

GENERAL MANUFAC-  
BALANCE  
DECEMBER

ASSETS			
<b>Current assets:</b>			
Cash on hand and on deposit. . . . .	\$	54,000	
U. S. Government securities at cost (market, \$87,500)		86,000	
Trade notes and accounts receivable — less allowance for bad debts, \$2,600			180,000
Inventories (valuation at cost or market, whichever is lower, cost being calculated by the first-in, first-out method):			
Raw materials and supplies	\$	185,000	
Goods in process		201,000	
Finished goods		190,000	576,000
Loans, advances, and accrued income items			20,000
Prepayments including taxes, insurance, and sundry items . . . .			14,500
<b>Total current assets</b>		\$	930,500
<b>Investments:</b>			
Sinking fund consisting of U. S. securities to be used for property additions	\$	250,000	
Investment in land not currently in use		110,000	360,000
<b>Plant and equipment:</b>			
Property, plant, and equipment, at cost	\$1,235,000		
Less allowances for depreciation	580,000		655,000
<b>Intangible assets:</b>			
Patents, copyrights, and goodwill — less amortization (See Note A)			120,000
<b>Deferred charges:</b>			
Unamortized bond discount and expense	\$	15,000	
Deferred developmental costs (See Note B)		40,000	55,000
<b>Other assets:</b>			
Advance payments on equipment purchase contracts	\$	25,000	
Long-term receivables		22,500	47,500
<b>Total assets . . . . .</b>			<u>\$2,168,000</u>

THE ACCOMPANYING NOTES A THROUGH F ARE

## TURING COMPANY

## SHEET

31, 1953

LIABILITIES AND CAPITAL	
Current liabilities:	LIABILITIES
Notes and accounts payable.....	\$ 52,500
Estimated income taxes payable for current and prior years.....	62,000
Accrued payrolls, interest, social security, and general taxes....	23,500
Serial debenture bonds due May 1, 1954.....	20,000
Customers' deposits and credit balances, and sundry items....	24,000
Total current liabilities.....	\$ 182,000
Long-term debt:	
Twenty-year 3½% first mortgage bonds.....	\$ 250,000
Serial 3½% debenture bonds due May 1, 1955, to May 1, 1963, inclusive.....	180,000
Estimated employee pensions payable (See Note C).....	60,000
Deferred credits:	
Deferred leasehold income extending to Jan. 1, 1965 (See Note D)	110,000
Contingent liabilities (See Note E).....	
Total liabilities.....	\$ 782,000
Paid-in capital:	CAPITAL
First preferred 5% stock, cumulative and convertible into common, par \$25, 10,000 shares authorized, 8,000 issued.....	\$ 200,000
Second preferred 6% stock, cumulative and redeem- able, par \$10, 50,000 shares authorized, 30,000 issued (See Note F).....	300,000
No-par common stock, stated value \$5, 100,000 shares authorized, 24,000 shares reserved for con- version of first preferred, 60,000 shares issued (treasury stock reacquired, 5,000 shares - de- ducted below).....	300,000
	\$ 800,000
Paid-in surplus:	
Resulting from sale of common stock in excess of stated value.....	\$260,000
Resulting from sale of treasury stock....	16,000
Total paid-in capital.....	\$1,076,000
Earned surplus:	
Appropriated:	
For purchase of treasury stock..	\$40,000
For contingencies.....	85,000
Unappropriated.....	225,000
Total earned surplus.....	350,000
	\$1,426,000
Less common treasury stock, at cost (5,000 shares acquired at \$8).....	40,000
Total capital.....	1,386,000
Total liabilities and capital.....	\$2,168,000

AN INTEGRAL PART OF THIS FINANCIAL STATEMENT.

## GENERAL MANUFACTURING COMPANY

## NOTES TO FINANCIAL STATEMENTS — YEAR ENDED DECEMBER 31, 1953

- Note A: Intangible assets are being written off over the period of their estimated useful life, with the exception of goodwill, which is carried at its original cost, \$75,000. The balance of organization costs, \$40,000, was written off during the year.
- Note B: Certain research and developmental costs in 1952 and 1953 relating to new products that will be marketed beginning in 1954 have been deferred and will be charged to subsequent operations.
- Note C: The liability under the Company pension plan has been calculated on the basis of actuarial studies.
- Note D: The Company leased Market Street properties for a fifteen-year period ending January 1, 1965. Leasehold payment received in advance is being recognized as income over the lifetime of the lease.
- Note E: The Company is contingently liable on guaranteed notes and accounts totaling \$40,000. Also, various suits are pending on which the ultimate legal responsibility cannot be determined. In the opinion of counsel and management, such liability, if any, will not be material. Retained earnings have been appropriated for contingencies in anticipation of possible losses.
- Note F: Second preferred stock may be redeemed at the option of the board of directors at  $12\frac{1}{2}$  plus accrued dividends on or before December 31, 1955, and at gradually reduced amounts but at not less than  $10\frac{1}{2}$  plus accrued dividends after January 1, 1961.

number of shares of stock in the hands of stockholders. When stock has been reacquired and a treasury stock account reports a debit balance, this balance should be subtracted from the sum of capital stock and surplus in arriving at corporate capital, and the number of shares represented by the treasury stock should be subtracted from the number of shares issued in arriving at the number of shares outstanding. When shares of stock have been subscribed for but are unissued, the value of capital stock subscribed should be included in summarizing total capital and the number of shares subscribed should be added to the number of shares issued and outstanding for purposes of the book value calculation.

To illustrate the computation of book value when there is only one class of stock, assume capital accounts for the Mosich Corporation as shown at the top of the opposite page.

The book value per share of stock is calculated as follows:

$\$2,125,000$  (total capital)  $\div$   $115,000$  (shares issued,  $100,000$ , plus shares subscribed,  $20,000$ , minus treasury shares,  $5,000$ ) =  $\$18.48$ .

When there are both preferred and common shares, it is first necessary to determine the portion of the capital identified with the pre-

Capital stock, 100,000 shares issued, par \$10 (5,000 shares re-acquired and held in treasury — see below) .....		\$1,000,000
Capital stock subscribed, 20,000 shares .....		200,000
Paid-in surplus .....		350,000
Earned surplus:		
Appropriated .....	\$200,000	
Unappropriated .....	450,000	650,000
		<hr/>
		\$2,200,000
Less stock reacquired and held in treasury, 5,000 shares, reported at cost .....		75,000
		<hr/>
Total capital .....		\$2,125,000
		<hr/>

ferred shares. The portion of capital related to preferred shares when subtracted from total capital gives the portion of capital related to the common shares. The capital related to preferred shares divided by the number of preferred shares gives the book value of preferred shares. The capital related to common shares divided by the number of common shares gives the book value of common shares.

The portion of capital related to preferred shares would be that portion distributable to preferred stockholders in the event of corporate liquidation. The capital relating to preferred shares calls for consideration of the following items:

*Liquidation value.* Preferred shares may have a liquidating value equal to par, to par plus a premium, or to an arbitrary dollar amount. Capital equal to this liquidating value for the number of preferred shares outstanding should be assigned to preferred. A preferred call price, when this differs from the amount to be paid to preferred stockholders upon liquidation, would not be applicable for purposes of the book value computations; redemption of preferred stock is not obligatory, hence redemption values are not operative in the assumption of liquidation and the full apportionment of values between preferred and common stockholders.

*Dividend rights.* (a) Preferred stock may have certain rights in corporate surplus as a result of special dividend privileges. For example, preferred shares may be entitled to dividends not yet declared for a portion of the current year, assuming liquidation; here a portion of surplus equal to the requirements would be related to preferred shares. (b) Preferred stock may be cumulative with dividends in arrears. Upon liquidation, when preferred stockholders are entitled to dividends in arrears regardless of any surplus or deficit balance reported on the books, then capital equivalent to the dividends in arrears is assigned to preferred shares even though this means the impairment or the elimina-

tion of any invested capital equity relating to common stockholders. When preferred stockholders are entitled to dividends in arrears only in the event of available surplus, as much surplus as is available but not in excess of such dividend requirements would be related to preferred stock. (c) Preferred stock may be participating. When a balance of surplus is subject to distribution on a participating basis, the basis of participation should be applied to surplus and the portion distributable to preferred stock should be assigned to this equity.

The computation of book values for preferred and common shares is illustrated in the series of examples that follow. Examples are based upon the capital of the Maxwell Corporation on December 31, 1953, which follows:

6% Preferred Stock, 10,000 shares, par \$50 .....	\$ 500,000
Common Stock, 100,000 shares, par \$10 .....	1,000,000
Earned Surplus .....	250,000
<b>Total Capital .....</b>	<b>\$1,750,000</b>

*Example 1.* Assume that preferred dividends have been paid to July 1, 1953. Preferred stock has a liquidating value of \$52 and is entitled to current unpaid dividends. Book values on December 31, 1953, would be developed as follows:

Total capital .....	\$1,750,000
Capital identified with preferred:	
Liquidation value, 10,000 shares @ 52 .....	\$520,000
Current dividends, 3% of \$500,000 .....	15,000
	535,000
<b>Balance — capital identified with common .....</b>	<b>\$1,215,000</b>
Book values per share:	
Preferred: \$ 535,000 ÷ 10,000 .....	\$53.50
Common: \$1,215,000 ÷ 100,000 .....	\$12.15

*Example 2.* Assume that preferred stock has a liquidating value of \$52. Preferred is cumulative, with dividends 5 years in arrears on December 31, 1953, that must be paid in the event of liquidation. Book values would be developed as follows:

Total capital .....	\$1,750,000
Capital identified with preferred:	
Liquidation value, 10,000 shares @ 52 .....	\$520,000
Dividends in arrears, 30% of \$500,000 .....	150,000
	670,000
<b>Balance — capital identified with common .....</b>	<b>\$1,080,000</b>
Book values per share:	
Preferred: \$ 670,000 ÷ 10,000 .....	\$67.00
Common: \$1,080,000 ÷ 100,000 .....	\$10.80

*Example 3.* Assume that preferred stock has a liquidating value of par. Preferred is cumulative with dividends 10 years in arrears on December 31, 1953, that are fully payable in the event of liquidation even though impairing the invested capital of the common group. Book values would be developed as follows:

Total capital.....	\$1,750,000
Capital identified with preferred:	
Liquidation value, 10,000 shares @ 50.....	\$500,000
Dividends in arrears, 60% of \$500,000.....	300,000      800,000
Balance — capital identified with common.....	\$ 950,000
Book values per share:	
Preferred: \$800,000 ÷ 10,000.....	\$80.00
Common: 950,000 ÷ 100,000.....	\$ 9.50

*Example 4.* Assume that preferred stock has a liquidating value of par. A preferred dividend of \$1.50 has been paid for the first half of 1953, but no common dividends have been declared or paid. Preferred stock is entitled to full participation ratably with common stock after common stock has received the preferred rate.

The portions of the surplus relating to the preferred and common issues on December 31, 1953, are calculated as follows:

		To PREFERRED	To COMMON
Balance of surplus.....	\$250,000		
Less current dividend requirements on preferred, 3% of \$500,000.....	15,000	\$15,000	
	<u>\$235,000</u>		
Less current dividend requirements on common, 6% of \$1,000,000.....	60,000		\$60,000
	<u>\$175,000</u>		
Balance of surplus, distributable ratably to preferred and common, 11.6667% (\$175,000, earnings available to both classes ÷ \$1,500,000, par value of stock of both classes). Distributable to preferred, 11.6667% of \$500,000..	58,333	58,333	
	<u></u>		
Distributable to common, 11.6667% of \$1,000,000.....	\$116,667		116,667
	<u></u>		
Totals to common and preferred.....		\$73,333	\$176,667

Book values may now be developed as follows:

Total capital		\$1,750,000
Capital identified with preferred:		
Liquidation value, 10,000 shares @ 50	\$500,000	
Current dividends and surplus in participation with common	73,333	573,333
	<hr/>	<hr/>
Balance capital identified with common		\$1,176,667
		<hr/>
Book values per share		
Preferred: \$ 573,333 ÷ 10,000		\$57.33
Common: \$1,176,667 ÷ 100,000		\$11.77

The nature and the limitations of the share book value measurements should be fully appreciated in the use of these data. Share book values are developed from the values as reported on the books. Furthermore, calculations require the assumption of liquidation in the allocation of amounts to the several classes of stock. Book values of property items on the accounting records may vary materially from the present worth of such properties. Moreover, book values of property items are stated in terms of the "going concern"; the full implications of a "quitting concern" approach would call for many significant changes in property values as reported by the books. Share book values simply offer a measurement of the net assets related to each share in terms of the valuation employed on the accounting statements.

The redemption value of preferred stock and its claim upon surplus in the event of liquidation is of significance to both common and preferred stockholders. Clear disclosure of the special rights relating to preferred stock should be provided on the balance sheet if stockholders are to be fully informed concerning their equities in the corporation.

### EARNINGS PER SHARE

The earnings per share measurement is the amount earned during the course of the period on each share of the capital stock outstanding. This measurement is frequently sought as an index of stock worth. It is also used in judging the dividend policies of the company, the earnings per share being compared with the dividends paid per share during an accounting period.

When only one class of stock is outstanding, the entire profit is identified with these shares; profit, then, divided by the number of shares of stock outstanding gives the earnings relating to each share. When preferred and common shares are outstanding, a portion of the earnings would have to be identified with preferred stock and the

balance with common stock. In dividing the earnings, the special claims that preferred shares have upon earnings must be considered. Earnings relating to each class of shares divided by the number of shares outstanding gives the amount earned per share in that class.

To illustrate per-share earnings calculations, assume net income of \$1,500,000 and stock of a single class outstanding consisting of 1,000,000 shares. Per-share earnings are calculated as follows:

$$\frac{\$1,500,000}{1,000,000} = \$1.50 \text{ per share}$$

However, assume the same earnings but two classes of stock outstanding as follows: 6% preferred stock, par \$100, 10,000 shares; and common stock, 1,000,000 shares. Preferred is cumulative and non-participating. Earnings per share on common are calculated as follows:

Net income	\$1,500,000
Less dividend requirements on preferred shares, 6% of \$1,000,000	60,000

Net income identified with common shares after deduction of earnings identified with preferred shares	\$1,440,000
--	-------------

$$\text{Per-share earnings on common: } \frac{\$1,440,000}{1,000,000} = \$1.44 \text{ per share}$$

When preferred stock participates in earnings in excess of the stated preferred rate, appropriate recognition of such participation features are required in developing per-share earnings.

When earnings per share are calculated in terms of the number of shares outstanding at the end of the period and there have been changes in the number of shares outstanding during the period as a result of additional stock issue, stock dividends, split-ups, etc., per-share earnings data should be accompanied by a summary of the changes in shares that took place during the period and the implications of these changes.

In calculating per-share earnings the question arises as to whether earnings should include extraordinary items and corrections in profits of prior periods or whether the earnings amount should be limited to the result of normally recurring items. It would seem that when accounting statements develop a net income balance in terms of normally recurring items and report special and nonrecurring items separately on the income statement or as changes in surplus on the surplus statement, two per-share measurements would be called for: (1) per-share earnings before special charges and credits for the period, and (2) per-share effects of special charges and credits recognized during the period. This

proposal is made by the American Institute Committee on Accounting Procedure in Accounting Research Bulletin No. 32 where it comments as follows:

In its deliberations concerning the nature and purpose of the income statement, the committee has been mindful of the disposition of even well-informed persons to attach undue importance to a single net income figure and to "earnings per share" shown for a particular year. The committee directs attention to the undesirability in many cases of the dissemination of information in which major prominence is given to a single figure of "net income" or "net income per share." However, if such income data are reported (as in newspapers, investors' services, and annual corporate reports), the committee strongly urges that any determination of "income per share" be related to the amount reported as net income, and that where charges or credits have been excluded from the determination of net income, the corresponding total or per share amount of such charges and credits also be reported separately and simultaneously.<sup>1</sup>

## QUESTIONS

1. Describe each of the following: (a) valuation reserve, (b) liability reserve, (c) surplus reserve.

2. (a) What criticisms have been made of the term "reserve"? (b) What position has been taken by the American Institute of Accountants and by the American Accounting Association with respect to the use of the term? (c) What position would you take with respect to use of the term? What substitute terms would you employ?

3. Appropriations limiting the use of surplus may arise from (a) legal requirements, (b) contractual requirements, and (c) managerial policy. Give an example of each of the above.

4. What is meant by a funded reserve?

5. (a) Describe the accounting procedure that is followed to establish:

- (1) A reserve to reduce the inventory reported at cost to a lower market.
- (2) A reserve to record the estimated loss on purchase commitments.
- (3) A reserve to record a possible future loss on merchandise on hand.

(b) What ultimate disposition should be made of the reserve in each of the cases listed?

6. A stockholder of Michel, Inc. does not understand the purpose of the Reserve for Bond Sinking Fund that has been set up by periodic appropriations from Earned Surplus. He is told that the bonds will not be redeemed from this reserve at maturity. (a) What account will be reduced by the payment of the bonds? (b) What purpose is accomplished by the Reserve for Bond Sinking Fund? (c) What possible dispositions may be made of the reserve?

7. (a) Describe a general purpose contingency reserve. (b) How should it be established? (c) Assuming that certain contingencies materialize and that significant losses are incurred, how would you recommend that

<sup>1</sup>*Accounting Research Bulletin No. 32, "Income and Earned Surplus,"* December 1947 (New York: American Institute of Accountants), p. 264.

these be recorded, and what ultimate disposition should be made of the reserve balance?

8. Management of the Rossmore Co., considering the possibility of a strike by employees, authorized the establishment of a reserve for contingencies at the end of 1952 by a charge to revenue. The strike was called in 1953, and company losses incurred to the date of the strike settlement were charged against the reserve. The company management points out that it exercised good judgment in anticipating strike losses and providing a cushion for such costs. What criticism, if any, can you offer to the accounting procedures that were followed by the company?

9. (a) What is meant by self-insurance? (b) Describe the accounting procedures in considering possible future charges and in recognizing such charges when they occur assuming that (1) self-insurance is considered to involve accruable losses and (2) self-insurance is considered to involve nonaccruable losses.

10. (a) Under what circumstances, if any, can a valuation allowance be established out of earned surplus? (b) Under what circumstances, if any, can a surplus reserve be established from current revenues?

11. What objections are made by the American Accounting Association to the appropriation of retained income to reflect managerial policies relative to earnings?

12. The Carrabino Co. reports appropriations as a subtraction from net income at the bottom of the income statement. When an appropriated surplus balance is returned to retained income, it is reported as an addition to net income on the income statement. What objections, if any, would you raise to such a practice?

13. State where each of the following accounts will appear on the balance sheet:

- |  |  |
|--|--|
| (a) Reserve for Contingencies                        | (i) Reserve for Depletion                      |
| (b) Reserve for Doubtful Accounts                    | (j) Reserve for Redeemable Coupons Outstanding |
| (c) Reserve for Possible Inventory Decline           | (k) Reserve for Repairs and Replacements       |
| (d) Reserve for Self-Insurance—<br>Fire Loss         | (l) Reserve for Purchase of Treasury Stock     |
| (e) Reserve for Bond Retirement                      | (m) Reserve for Personal Injury Claims Pending |
| (f) Reserve for Income Taxes                         | (n) Reserve for Unrealized Plant Appreciation  |
| (g) Reserve for Plant Expansion                      |  |
| (h) Reserve for Increased Investment in Plant Assets |  |

14. Define share book value. What problems arise in the calculation of share book value when stock outstanding consists of both preferred and common shares?

15. Define per-share earnings. What problems arise in the calculation of per-share earnings when stock outstanding consists of both preferred and common shares?

**16.** How would you recommend that per-share earnings be reported when the increase in earned surplus accrues from both normally recurring items and extraordinary items that are material in amount?

**17.** Which of the following transactions result in a change in total capital? What is the nature of the change?

- (a) Declaration of a cash dividend on capital stock.
- (b) Payment of a cash dividend on capital stock.
- (c) Retirement of bonds payable for which both a sinking fund and a reserve had been accumulated.
- (d) Declaration of a stock dividend.
- (e) Payment of a stock dividend.
- (f) Conversion of bonds payable into preferred stock.
- (g) The passing of a dividend on cumulative preferred stock.
- (h) Donation by the officers of shares of stock.
- (i) Operating loss for the period.

**18.** How would you report the following items: (a) dividends in arrears on cumulative preferred stock, (b) unclaimed bond interest and unclaimed dividends, (c) stock purchase rights issued but not exercised as of the balance sheet date, (d) stock that is callable at the option of the corporation at a premium?

## EXERCISES

**1.** As a result of an agreement with bondholders, the Barney Co. is required to appropriate earnings of \$200,000 at the end of each calendar year for the years 1948-1952. At the beginning of 1953, upon liquidation of the bonded indebtedness, the surplus appropriation is canceled. This is followed by the declaration and the issue of a 50% common stock dividend on 250,000 shares of common stock outstanding, par \$10. Surplus is charged for the stock dividend at par. What entries are required for (a) periodic appropriations, (b) cancellation of the reserve in 1953, and (c) capitalization of surplus by means of the stock dividend.

**2.** A physical inventory taken by the Bernard Co. on December 31, 1953, discloses goods on hand with a cost of \$315,000; the inventory is recorded at this figure less an allowance of \$12,500 to reduce it to the lower of cost or market. At the same time, the company establishes a reserve for possible future inventory decline of \$100,000. (a) Give the entries to be made at the end of 1953 in recording the inventory and establishing the reserve as indicated. (b) Give the entries in 1954 to close the beginning inventory and reserve balances established at the end of 1953, assuming that the estimated inventory decline does not materialize and that the inventory at the end of 1954 is properly reported at cost, which is lower than market. (c) Give the entries in 1954 to close the inventory and reserve balances established at the end of 1953 if a decline in the value of the December 31, 1953, inventory of \$125,000 is to be recognized; the inventory at the end of 1954 is properly reported at cost, which is lower than its market at this date.

3. Suits for damages totaling \$100,000 are pending against the Swift Co. on December 31, 1953. Counsel for the company advises that losses on such suits, if any, should not be material. However, company management establishes a reserve of \$100,000 to meet any possible loss from this source. All of the suits are settled in 1954, payments of \$14,500 being made. Give entries to record (a) establishment of the reserve in 1953, (b) payments made in 1954, (c) cancellation of the reserve in 1954.

4. State for each of the following whether it is a valuation, liability, or surplus reserve and give the entry whereby the reserve is established.

- (a) Reserve for Amortization of Patents
- (b) Reserve for Federal Income Taxes
- (c) Reserve for Possible Inventory Decline
- (d) Reserve for Revaluation of Plant and Equipment
- (e) Reserve for Containers Out
- (f) Reserve for Obsolete Merchandise
- (g) Reserve for Self-Insurance — Fire Loss
- (h) Reserve for Payments under Employee Retirement Plan
- (i) Reserve for Sales Discounts
- (j) Reserve for Plant Expansion
- (k) Reserve to Meet Claims on Product Guarantees
- (l) Reserve for Purchase of Treasury Stock
- (m) Reserve for Premium Claims Outstanding
- (n) Reserve for Redeemable Purchase Orders Outstanding
- (o) Reserve for Depreciation Appraisal Increase
- (p) Reserve for Repairs and Replacements
- (q) Reserve for Contingencies
- (r) Reserve for Claims Arising from Company Defaults on Contracts
- (s) Reserve for Vacation Payments to Employees
- (t) Reserve for Repairs to Plant and Equipment Items

5. The Weisfield Co. reports appropriated surplus on its balance sheet at the end of 1953 at \$480,000. Analysis of the account balances in support of this total discloses the following:

Reserve for contingencies — to meet estimated claims arising from accidents in 1953 for which the company is liable	\$ 22,500
Reserve for self-insurance — fire loss — to meet possible future fire losses as a result of self-insurance on this contingency	30,000
Reserve for pensions — to meet estimated pension costs arising from contracts with employees	310,000
Reserve for revaluation of plant properties arising from asset appraisal increases	85,000
Reserve for possible declines on marketable securities — to meet possible future losses on marketable securities held	20,000
Reserve for plant rehabilitation costs — to meet costs of rehabilitating plant at termination of lease in accordance with contractual requirements	12,500
	<hr/> \$480,000 <hr/>

Which of the above items, if any, would you exclude from the appropriated surplus classification? State how you would classify such items.

**6. Name the errors in the entries shown below:****EARNED SURPLUS**

- |  |                                       |
|--|---------------------------------------|
| (a) Dividends declared to common stockholders.   | (d) Appraisal of fixed assets.        |
| (b) Allocation to Reserve for Bond Sinking Fund. | (e) Net profit for year.              |
| (c) Sale of stock at a discount.                 | (f) Gain from sale of treasury stock. |

**CAPITAL SURPLUS**

- |   |                                    |
|---|------------------------------------|
| (g) Dividends declared to preferred stockholders.         | (i) Profit from sale of building.  |
| (h) Correction reducing profit of previous fiscal period. | (j) Reserve for Bond Sinking Fund. |
|   | (k) Premium from sale of bonds.    |

**7. Capital accounts of the Palmerville Co. report the following balances:**

Authorized Capital Stock, 100,000 shares, par value \$25 . . .	\$2,500,000
Unissued Capital Stock (20,000 shares) . . . . .	500,000
Treasury Stock (2,000 shares, at cost) . . . . .	60,000
Paid-in Surplus . . . . .	185,000
Deficit . . . . .	280,000

Calculate the amount of the book value per share of stock outstanding.

**8. Capital balances of Hall, Inc., on December 31, 1953, follow:**

Common Stock, 50,000 shares, par \$10 . . . . .	\$500,000
6% Preferred Stock, 5,000 shares, par \$25 . . . . .	125,000
Paid-in Surplus . . . . .	75,000
Earned Surplus . . . . .	50,000
	<hr/>
	\$750,000

Calculate the book values per share of preferred stock and common stock under each of the following assumptions:

- Preferred stock is noncumulative and nonparticipating, callable at \$30, and preferred as to assets at \$27.50 upon corporate liquidation.
- Preferred stock is cumulative, nonparticipating, with dividends in arrears for 6 years; upon corporate liquidation, shares are preferred as to assets up to par, and must be paid any dividends in arrears before distributions may be made to common shares.
- Preferred stock is fully participating with common stock; upon corporate liquidation any distributions beyond stock par values are to be made ratably on preferred and common shares.

**9. The income statement for the Samson Co. for the year ended December 31, 1953, shows:**

Net income before income taxes . . . . .	\$310,000
Income taxes . . . . .	75,000
	<hr/>
	\$235,000
Add extraordinary gain from sale of Springfield branch store	205,000
	<hr/>
	\$440,000

Calculate per-share earnings for 1953 under each of the following assumptions:

- (a) The company has only one class of stock, the number of shares outstanding totaling 200,000.
- (b) The company has shares outstanding as follows:

5% cumulative, nonparticipating preferred, par \$100, 10,000 shares  
Common, par \$25, 200,000 shares

### PROBLEMS

**23-1.** Accounts of the Jensen Co. after closing on December 31, 1953, show the balances listed below. From this data prepare a balance sheet capital section for the corporation as it would appear on December 31.

ACCOUNT	DR.	CR.
Authorized Capital Stock (\$10 par) . . . . .		750,000
Bonds Payable . . . . .		250,000
Bond Sinking Fund . . . . .	190,000	
Capital Stock Subscribed . . . . .		40,000
Current Assets . . . . .	552,000	
Current Liabilities . . . . .		80,000
Dividends Payable — Cash . . . . .		12,000
Dividends Payable — Stock . . . . .		70,000
Plant . . . . .	800,000	
Plant — Increase per Appraisal . . . . .	340,000	
Premium on Stock . . . . .		35,000
Reserve for Bond Sinking Fund . . . . .		140,000
Reserve for Contingencies . . . . .		100,000
Reserve for Customers' Deposits . . . . .		15,000
Reserve for Depreciation of Plant . . . . .		210,000
Reserve for Depreciation of Plant — Increase per Appraisal . . . . .		85,000
Reserve for Federal Income Taxes . . . . .		40,000
Reserve for Purchase of Treasury Stock . . . . .		75,000
Surplus from Revaluation of Plant . . . . .		255,000
Treasury Stock (at par) . . . . .	60,000	
Treasury Stock Surplus . . . . .		45,000
Unappropriated Earned Surplus . . . . .		50,000
Unissued Capital Stock . . . . .	310,000	
	2,252,000	2,252,000

**23-2.** The Beverly-Bell, Inc. balance sheet on December 31, 1953, showed the following surplus balances:

Capital surplus:		
Arising from sale of no-par common	\$ 36,000	
Arising from sale of treasury stock	15,000	\$ 51,000
	-	-
Earned surplus:		
Appropriated		
For bond sinking fund	\$ 95,000	
For plant expansion	30,000	
	\$125,000	
Unappropriated	65,000	190,000
	-	-
Total surplus		\$241,000
		- - -

An audit of the corporation's books one month later disclosed the following errors and omissions:

- (1) Machinery purchased July 1, 1952, for \$20,000 has not been depreciated. It is expected to have a life of 10 years and no salvage value.
- (2) Merchandise received in 1953, but not entered in the purchase journal until January 5, 1954, was included in the inventory at the end of 1953, \$5,000.
- (3) Premium of \$700 on the resale of forfeited common stock was recorded as an operating profit.

Transactions during 1951 that affected the capital stock and surplus accounts were as follows:

- (1) 20,000 shares of no-par common stock, stated value \$15 a share, were sold for \$16 a share.
- (2) The first mortgage bonds were retired, releasing the reserve for bond sinking fund.
- (3) Machinery purchased January 1, 1951, for \$16,000 and depreciated on the basis of a 15-year life with a \$1,000 salvage value was sold on July 1, 1954, for \$9,500, earned surplus being charged for the loss.
- (4) An appraisal of land by an appraisal company showed this property to be worth \$45,000 in excess of original cost. A revaluation on the books was approved by the board of directors.
- (5) The board of directors declared a cash dividend of 5% on 10,000 shares of preferred stock, par \$25.
- (6) Organization costs of \$6,500 and goodwill of \$10,000 were written off against earned surplus.
- (7) The credit balance in the profit and loss account at the end of 1954, after income taxes, was \$56,000.
- (8) A new \$500,000 bond issue was floated at the beginning of 1954. Bonds mature in 20 years. A sinking fund reserve was set up on December 31, 1954. Surplus equal to the entire amount of the bond issue is to be accumulated by means of equal annual appropriations.

- (9) Surplus appropriations were authorized as follows: for plant expansion, \$30,000; for possible inventory decline, \$50,000.

*Instructions:* (1) Give the journal entries to record the foregoing data. (The corporation records corrections in profits of prior periods directly in earned surplus.)

(2) Prepare the balance sheet surplus section as of December 31, 1954, and prepare surplus statements in support of the ending surplus balances.

**23-3.** The balance sheet of Newby-McNally Corporation appeared as follows on December 31, 1952:

NEWBY-McNALLY CORPORATION  
BALANCE SHEET  
DECEMBER 31, 1952

ASSETS		LIABILITIES AND CAPITAL	
Cash	\$11,500	Note payable	\$ 9,000
Notes receivable	10,000	Accounts payable	18,000
Accounts receivable (net)	17,000	Preferred dividends payable	750
Merchandise inventory	20,000	Mortgage payable	5,000
Store furniture and fixtures	7,500	5% Preferred stock \$10 par	15,000
Building	\$12,500	Common stock - 1,900 shares	
Less allow. for depr.	1,000	no-par, \$10 stated value	19,000
Land	8,000	Paid-in surplus*	14,000
Organization costs	5,000	Earned surplus	9,750
Total assets	\$90,500	Total liabilities and capital	\$90,500

\*Paid-in surplus on the balance sheet consists of premium on preferred stock, \$4,000, and paid-in surplus on common stock, \$10,000.

The following transactions affecting capital were completed in 1953:

- Jan. 10. Sold 2,000 shares of 5% preferred stock for cash at 13.  
 31. The following errors were discovered as of the end of 1952:  
     Merchandise inventory was understated by \$1,750.  
     Depreciation had not been recorded on store furniture and fixtures. These had been purchased on April 1, 1952. The depreciation rate is 20%.  
     Building repairs of \$500 were improperly capitalized. (Disregard effect upon depreciation.)  
 Feb. 2. Issued 2,100 shares of no-par common stock at 23.  
 Mar. 31. A semiannual dividend of 25 cents was declared and paid on common stock.  
 May 16. Issued 2,000 shares of no-par common stock to P. Lynn in exchange for his going business. Assets taken over are recorded at the following values: land, \$10,000; building, \$20,000; merchandise inventory, \$8,000; accounts receivable, \$5,000. Accounts payable of \$5,000 were assumed. No goodwill is recognized in recording the purchase.  
 Aug. 15. Reacquired own common stock on the market, 500 shares at 17. Stock was recorded at cost.  
 Sept. 30. A semiannual dividend of 25 cents and an extra dividend of 10 cents was declared and paid on common stock.  
 Oct. 3. Sold 400 shares of treasury stock at \$20 per share.

- Nov. 10. Suffered a fire loss of \$2,300 on merchandise. The loss was charged to earned surplus, no insurance having been carried.
- Dec. 21. The 5% annual dividend was declared on preferred stock, payable January 12, 1954. The board of directors authorized a Reserve for Plant Expansion of \$10,000.
31. The credit balance of the profit and loss account after income taxes was \$8,650; this was transferred to the proper capital account.

*Instructions:* (1) Record the information above in journal entry form. (The corporation records corrections in profits of prior periods directly in earned surplus.)

(2) Prepare the capital section of the balance sheet and surplus statements to support ending surplus balances for year ended December 31, 1953.

**23-4.** The following accounts are taken from the ledger of Jackson Mills, Inc.:

#### REVALUATION SURPLUS

1953		1953	
Dec. 31	30,000	Jan. 1 Balance	225,000

#### TREASURY STOCK SURPLUS

		1953	
		Jan. 1 Balance	28,000
		July 1 Sale of treasury stock in excess of cost	2,000

#### RESERVE FOR PLANT EXPANSION

		1953	
		Jan. 1 Balance	60,000
		Dec. 31	30,000

#### RESERVE FOR TREASURY STOCK

1953		1953	
July 1	66,000	Jan. 1 Balance	45,000
		Apr. 1	42,000

#### EARNED SURPLUS UNAPPROPRIATED

1953		1953	
Jan. 10	Correction for understatement of depreciation charges, 1947 1952.	Jan. 1 Balance	600,000
	35,000	10	Correction for inventory understatement on Dec. 31, 1952.
Mar. 12	Additional federal income taxes for 1952.		15,000
	3,000	10	Correction for capital expenditures recorded as expenses in 1952.
April 1	Reserve for treasury stock.		9,000
	42,000	July 1	Reserve for treasury stock.
Oct. 31	Preferred dividends.		66,000
	50,000	Oct. 12	Gain on sale of plant and equipment items.
31	Stock dividend on common stock.		20,000
	200,000	Dec. 31	Net income after income taxes, 1953.
Dec. 31	Organization costs written off.		120,000
	10,000		
31	Reserve for plant expansion.		
	30,000		

*Instructions:* (1) Assuming that the income statement reports only net income from regularly recurring items, prepare individual surplus statements for 1953 in support of each of the ending surplus balances to be reported on the company's balance sheet at the end of the year.

(2) Assuming that the income statement reports extraordinary items and corrections, prepare a statement of surplus for 1953 that summarizes the changes in the various classes of surplus and supports the ending surplus balances to be reported on the company's balance sheet at the end of the year.

**23-5.** Capital balances of the McClellan Corporation on December 31, 1953, follow:

5% Preferred Stock, 20,000 shares, par \$50 .....	\$1,000,000
Common Stock, 100,000 shares, par \$20 .....	2,000,000
Paid-in Surplus .....	40,000
Earned Surplus .....	160,000
	<b>\$3,200,000</b>

*Instructions:* Calculate the book values of preferred shares and common shares as of December 31, 1953, under each of the following assumptions:

- (1) Preferred dividends have been paid to October 1, 1953; preferred shares have a call value of \$55, a liquidating value of \$52.50, and are entitled to current unpaid dividends.
- (2) Preferred shares have a liquidating value of par; shares are cumulative, with dividends 3 years in arrears and fully payable in the event of liquidation.
- (3) Preferred shares have a liquidating value of par; shares are cumulative, with dividends 5 years in arrears and fully payable in the event of liquidation.
- (4) Preferred shares have been paid 5% in 1953 but nothing has been paid on common; preferred is entitled to full participation ratably with common after common has been paid the preferred rate.

**23-6.** The balance sheet of the Sterns Company on September 30, 1953, has the following items on the credit side of the statement:

Current liabilities .....	\$103,732
Bonds payable .....	300,000
Reserve for bond retirement .....	160,000
6% Cumulative preferred stock, \$100 par value (entitled to \$110 and accumulated dividends per share in voluntary liquidation and to \$100 per share in involuntary liquidation). Authorized - 3,000 shares, issued - 2,000 shares, in treasury - 150 shares .....	185,000
Common stock, \$100 par value, authorized - 10,000 shares, issued and outstanding - 4,000 shares .....	400,000
Premium on preferred stock .....	10,000
Premium on common stock .....	67,300
Retained earnings .....	131,260

The company proposes to finance a plant expansion program by issuing an additional 2,000 shares of common stock. Common stockholders of record October 1, 1953, were notified that they will be permitted to subscribe to the new issue at \$150 per share up to 50% of their holdings. The

market value of the stock on October 1, 1953, was \$172.50 per share. The stock goes ex-rights in the market on October 3, 1953.

Peter Singer owns 100 shares of the Sterns Company common stock that he purchased in 1951 for \$16,431.20. He does not want to exercise his rights but wishes to sell them.

*Instructions:* (1) Compute the book value of a share of common stock as of September 30, 1953. Preferred dividends have been paid or set up as payable through September 30, 1953.

(2) Compute the theoretical value of Peter Singer's rights as of October 1, 1953.

(3) State the federal income tax rule as to stock rights and show the computation and the treatment of the transaction if Singer sells his rights for \$800. Indicate any further assumed facts on which your computation is based. (A.I.A. adapted)

**23-7.** A corporation presents the following condensed balance sheet as of the close of the year:

Cash . . . . .	\$ 90,000	Liabilities . . . . .	\$ 500,000
Other assets . . . .	1,510,000	Common stock . . . .	500,000
		6% preferred stock . . .	300,000
		8% preferred stock . . . .	200,000
		Surplus . . . . .	100,000
	\$1,600,000		\$1,600,000

The 6% stock is cumulative, the 8% stock is noncumulative, and both participate equally in the remaining surplus profits by being entitled to an extra dividend equal to the excess of any common dividend rate over and above 6% per annum. Par value of all stock outstanding is \$100.

*Instructions:* (1) Compute the book value per share for each class of stock in the following cases:

- Current year's dividends unpaid.
- Dividends unpaid for 2 years.
- Dividends unpaid for 3 years.

(2) What dividends could legally be declared to the various classes of stockholders, assuming that the 6% stock is nonparticipating, the 8% stock is participating on the basis stated, and no dividends are in arrears? (A.I.A. adapted)

**23-8.** The Duncan Company has outstanding on January 1, 1953, 1,500 shares of common stock, par value \$100, owned as follows:

John Dean . . . . .	600 shares
Mary Green . . . . .	200 shares
Frank Burke . . . . .	300 shares
James Riley . . . . .	400 shares

The surplus and reserves on the above date were: Earned Surplus, \$50,000; and Reserve for Bond Sinking Fund, \$25,000.

During the year the company declared and paid a 4% dividend in June and declared a 4% dividend on December 20, 1953, payable Janu-

ary 10, 1954. The profits were \$20,000 after depreciation, and \$6,000 was charged to Earned Surplus as an addition to the sinking fund reserve.

On January 1, 1954, the company purchased one half of Riley's stock at book value and sold it on January 10 to Ruby Feltz for \$190 per share.

During 1954 the company declared and paid a dividend of 9%. Its operating profits were \$25,000 after depreciation. The accountant set up a reserve for contingencies of \$2,000, and the directors ask that the following amounts be added to the reserves: \$4,000 for possible declines in market value of inventories, \$10,000 for expansion of plant, and \$3,000 for sinking fund.

*Instructions:* (1) Prepare journal entries to record the purchase and the sale of the stock in January, 1954.

(2) Prepare a statement showing how the book values of the stock on December 31, 1953, and December 31, 1954, should be calculated. (A.I.A. adapted)

**23-9.** You have been asked by the president of the Holden Corporation, manufacturer of home appliances, to review the company's capital, surplus, and reserve accounts and to make such proposals for their revision and balance sheet presentation as good accounting may suggest.

On April 30, 1952, the liability section of the company's published balance sheet appeared as follows:

**Capital:**

Capital stock, preferred, \$10 par, 10,000 shares authorized and issued —		
9,000 shares in hands of public.....	\$	90,000
1,000 shares held in treasury at cost of \$15,000, per contra.....		10,000
		<u>\$ 100,000</u>

**Capital stock, common, no par value**

100,000 shares authorized, 56,000 shares issued and in hands of public.....	\$	224,000
Paid-in surplus (50% on preferred shares in 1935) ..	50,000	274,000
		<u>274,000</u>

Current liabilities (detail omitted).....	388,000
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**Reserves for:**

Doubtful accounts . . . . .	\$ 2,000	
Postwar rehabilitation . . . . .	1,000,000	
Depreciation . . . . .	384,000	
Fire and accident insurance . . . . .	60,000	1,446,000

Surplus .....	2,671,000
	<u>2,671,000</u>

Total liabilities .....	\$4,879,000
	<u>\$4,879,000</u>

- (1) On April 30, 1953, half of the shares of the treasury preferred stock, which had been purchased in 1949 at \$15 per share, were sold at \$19 per share, the proceeds being credited to the treasury stock account.
- (2) The preferred capital stock carries an annual dividend of \$1 per share, and the dividend is cumulative. On April 30, 1952, unpaid dividends attaching to each share amounted to \$5, which was liquidated on Janu-

- ary 1, 1953, by issuing to preferred stockholders 9,000 shares of no-par-value common stock on which a value of \$5 per share had been declared.
- (3) A cash dividend of \$1 per share was declared to preferred stockholders of record April 1, 1953, payable May 1, 1953.
  - (4) Balances in the reserves for doubtful accounts and depreciation at April 30, 1953, were \$2,200 and \$401,000, respectively.
  - (5) The reserve for postwar rehabilitation was created in the preceding year by a provision out of income for a like amount. The intent was to set aside profits for possible but unknown future contingencies. During the current year, the sum of \$500,000, also charged to income, was added to the reserve.
  - (6) Plant expansion costs, amounting to \$285,000, for the manufacture of a postwar product unlike anything the company had previously put out, were charged against the rehabilitation reserve during the year 1952-53.
  - (7) The fire insurance reserve was increased during the year by a further provision of \$10,000 charged to profit and loss.
  - (8) The fire insurance reserve was decreased by \$2,000 — the cost, less \$400 depreciation, of a building destroyed by fire on April 15, 1953. Additional costs arising out of the fire, and not yet appearing on the books, for injuries to persons are expected to aggregate \$1,500.
  - (9) Surplus, as shown on last year's balance sheet, consisted of the value, ten years ago, of a donated plant site, amounting to \$134,000; gains of \$6,300 from the purchase and the sale in 1948 of 2,000 shares of treasury preferred stock; and undistributed earnings of \$2,530,700.
  - (10) During the past year, charges for the dividend in no-par common stock, for the cash dividend, and for an adjustment of \$4,100 in the previous year's tax liability reduced the account to \$2,612,900.
  - (11) Book net income for the year, after deducting reserve provisions, amounted to \$222,500.

*Instructions:* (1) Prepare a work sheet and brief notes or adjusting entries that will indicate and explain the changes that you would recommend.

(2) Prepare the capital stock, surplus, and reserve sections of the balance sheet as of April 30, 1953, as they should be presented. (A.I.A. adapted)

**23-10.** The balance sheet of a corporation shows \$200,000 capital stock, consisting of 2,000 shares of \$100 each, and a surplus of \$150,000. An audit of the accounts reveals that the treasurer is \$40,000 short in his accounts and has concealed this by adding the amount to the inventory. He owns 400 shares of the company's stock and in settlement of the shortage offers this stock at its book value. The offer is accepted; the company pays him the excess value and distributes the 400 shares thus acquired to the other shareholders.

*Instructions:* (1) What amount should the company pay him?

(2) By what journal entries should the foregoing transactions be recorded?

(3) What is the company's capital and surplus after the above distribution?

(4) What would be done if the company had had a deficit of \$50,000 and the 400 shares had been accepted at par? (A.I.A. adapted)

**23-11.** You have been engaged to audit the books of The Keystone Company as of December 31, 1953. A summary of the general ledger accounts is presented on page 728. Transactions summarized in the accounts are listed below and on pages 729 and 730.

SUMMARY OF TRANSACTIONS RECORDED DURING THE YEAR

(a) Accounts Receivable	190,000	
Sales		190,000
Sales on account.		
(b) Cash	181,000	
Accounts Receivable		180,000
Recoveries of Accounts Charged Off in Prior Years		1,000
Cash collections from accounts.		
(c) Purchases	140,000	
Accounts Payable	12,000	152,000
Cash		
Purchases for the year and payment of the opening balance of accounts payable.		
(d) Prepaid Expenses	2,000	
Expenses		2,000
Net change in prepaid expenses during the year.		
(e) Expenses	24,000	
Interest on Bonds	6,000	
Life Insurance — Company President	1,000	31,000
Cash		
Disbursement for operating expenses, bond interest (including interest deposited with trustee) and life insurance premium.		
(f) Investment in Lacker Co.	30,000	
U. S. Tax Notes	2,000	
Marketable Securities	10,000	42,000
Cash		
Disbursement on January 1, 1953 for stock of Lacker Company, tax notes and marketable securities.		
(g) Cash	205,000	
Bonds Payable		200,000
Unamortized Bond Discount		5,000
Issuance for cash on January 1, 1953 of \$200,000 of 3% twenty-year bonds at \$102.50.		
(h) Bonds Payable	100,000	
Unamortized Bond Discount	2,000	102,000
Cash		
Redemption at \$102 on January 1, 1953 of the outstanding issue of 5% bonds which were due January 1, 1958.		
(i) Accounts Receivable	5,000	
Cash		5,000
Cash advance to the company president.		
(j) Cash	40,000	
Common Stock		10,000
Surplus		30,000
Issue for cash on June 30, 1953 of 10,000 shares of no-par common stock at \$4 per share. (See comment under "Additional Information, Item 3.")		
(k) Treasury Stock	7,000	
Cash		7,000
Purchase on July 31, 1953 of 2,000 shares of the company's own common stock at \$3.50 per share.		
(l) Cash	4,000	
Treasury Stock		4,000
Sale at \$4 per share on August 31, 1953 of 1,000 shares of the stock reacquired on July 31, 1953. (See Item k above.)		

Account	Ledger Balances 12/31/52		Summary of Transactions		Ledger Balances 12/31/53	
	Debit	Credit	Debit	Credit	Debit	Credit
Cash . . . . .	\$ 8,000		(b) \$ 181,000 (g) 205,000 (j) 40,000 (l) 4,000 (r) 10,000	(c) \$ 152,000 (e) 31,000 (f) 42,000 (h) 102,000 (i) 5,000 (k) 7,000 (m) 9,000 (n) 10,000 (t) 30,000 (w) 3,000		
Accounts receivable	17,000		(a) 190,000 (i) 5,000 (t) 15,000	(b) 180,000		\$ 57,000
Inventory	20,000		(q) 30,000			47,000
U. S. tax notes			(f) 2,000			50,000
Marketable securities	3,000		(f) 10,000			2,000
Life insurance — com- pany president	7,000		(e) 1,000			13,000
Investment in Lacker Co. (90 % owned)			(f) 30,000			8,000
Land . . . . .	10,000					30,000
Buildings	200,000					10,000
Accumulated deprecia- tion — buildings		\$ 50,000		(o) 4,000	200,000	
Machinery	100,000		(n) 10,000			\$ 54,000
Accumulated deprecia- tion — machinery		50,000		(o) 11,000	110,000	
Goodwill			(t) 14,000	(u) 14,000		61,000
Unamortized bond dis- count	3,000		(h) 2,000	(g) 5,000		
Prepaid expenses	1,000		(d) 2,000		3,000	
Accounts payable		12,000	(e) 12,000	(p) 20,000		20,000
Reserve for 1952 and 1953 income taxes		15,000	(m) 9,000 (z) 3,800			2,200
Reserve for possible in- ventory price declines		5,000		(v) 5,000		10,000
Bonds payable	100,000		(h) 100,000	(g) 200,000		200,000
Reserve for losses	10,000		(u) 14,000 (w) 3,000	(v) 15,000 (y) 5,500 (z) 3,800		
Reserve for bad accounts		2,000		(s) 475		17,300
Common stock		30,000		(j) 10,000 (x) 4,000		2,475
Surplus		95,000	(x) 4,000 (k) 7,000 (x) 100	(j) 30,000 (l) 4,000		44,000
Treasury stock					3,100	121,000
Sales				(a) 190,000		
Purchases			(c) 140,000 (p) 20,000 (v) 5,000 (t) 1,000	(q) 30,000		190,000
Expenses .			(e) 24,000 (v) 15,000 (y) 5,500 (o) 15,000 (s) 475	(d) 2,000	136,000	
Depreciation expense .					37,000	
Bad debt expense					20,500	
Recoveries of accounts charged off in prior years					475	
Dividend and interest in- come				(b) 1,000 (r) 10,000 (x) 100		1,000
Interest on bonds .			(e) 6,000		6,000	10,100
	\$369,000	\$369,000	\$1,135,875	\$1,135,875	\$733,075	\$733,075

(m) Reserve for 1952 Income Taxes	9,000	
Cash		9,000
Payment of 1952 income taxes in full.		
(n) Machinery	10,000	
Cash		10,000
Payment for machinery purchased on January 2, 1953 together with \$200 freight and \$800 installation cost.		
(o) Depreciation Expense	15,000	
Accumulated Depreciation — Buildings		4,000
Accumulated Depreciation — Machinery		11,000
Depreciation expense for the year at the rate of 10% on machinery and 2% on buildings.		
(p) Purchases	20,000	
Accounts Payable		20,000
Set up the unrecorded purchases and accounts payable at December 31, 1953.		
(q) Inventory	30,000	
Purchases		30,000
To adjust the inventory balance as of December 31, 1952 to the correct balance as of December 31, 1953.		
(r) Cash	10,000	
Dividend and Interest Income		10,000
Interest and dividend collected. The dividend of \$9,000 was from Lacker Company. It was declared on January 10, 1953. The surplus accounts of Lacker Company decreased \$10,000 during the year 1953.		
(s) Bad Debt Expense	475	
Reserve for Bad Accounts		475
Provision for estimated loss on accounts receivable. The company bases its provision on 1% of 1% of sales under the theory that the net uncollectible receivables (charge-offs less recoveries) arising in each year will approximate that amount.		
(t) Accounts Receivable	15,000	
Purchases	1,000	
Goodwill	14,000	
Cash		30,000
On July 1, 1953, the company purchased the inventory and receivables of the Cole Sales Co. at a cost of \$30,000. The purchase was made primarily to obtain an exclusive agency having seven years of remaining life. The inventory obtained in the purchase was valued at \$1,000 and the receivables, all of which were collectible, amounted to \$15,000. (Also see the following item.)		
(u) Reserve for Losses	14,000	
Goodwill		14,000
The \$14,000 set up as goodwill as a result of the purchase of the business of the Cole Sales Co. was written off to reserve for losses "in order to avoid showing goodwill on the balance sheet."		
(v) Expenses	15,000	
Purchases	5,000	
Reserve for Possible Inventory Price Declines		5,000
Reserve for Losses		15,000
The directors decided that, in view of the general business uncertainty, the reserve for losses and the reserve for possible inventory price decline should be increased. These provisions were charged to expense of the year, the inventory provision being charged to purchases and the loss provision to expenses.		
(w) Reserve for Losses	3,000	
Cash		3,000
Payment to B. Walter, an employee, in settlement of his claim for personal injury as a result of an accident on March 2, 1953. The charge was to reserve for losses.		

(x) Surplus.....	4,000	
Treasury Stock.....	100	
Common Stock.....		4,000
Dividend and Interest Income.....		100
A stock dividend of 10% was declared and paid on September 1, 1953. The stock was credited to capital stock account at \$1 per share.		
(y) Depreciation Expense.....	5,500	
Reserve for Losses.....		5,500
The board of directors approved the following action applicable to 1953 accounts: "In view of the 50% rise in machinery prices over average prices at which the company acquired its machinery now in use, it is suggested that depreciation on machinery should be increased 50%, with the credit made to reserve for losses rather than to the depreciation reserve in order to keep the latter account on a cost basis."		
(z) Reserve for 1952 and 1953 Income Taxes.....	3,800	
Reserve for Losses.....		3,800
The reserve for income taxes was debited \$3,800 with a corresponding credit to reserve for losses in order to reduce the reserve for income taxes down to the estimated liability as of the close of 1953. (The amount of \$2,200 liability may be assumed to be the correct liability for the purpose of this solution even though you may adjust net profit.)		

Additional information was developed during the course of your audit (which is the first audit that the company has ever had) as follows:

- (1) The cash surrender value of life insurance was \$2,000 on December 31, 1952, and \$2,500 on December 31, 1953.
- (2) On December 31, 1953, the "bid" price of the bonds included under marketable securities was \$13,500 and the "ask" price was \$14,000.
- (3) Common stock has no par value. The original issue of 30,000 shares was at \$2 per share. The company set up each share at \$1 per share in the stock account in order to have the account show the number of shares outstanding. The board of directors approved this practice.
- (4) The analysis of surplus shows the following summary of transactions since inception of the company:

Amount received from issuance of 30,000 shares of common stock at \$2 per share above the amount credited to the capital stock account.....	\$ 30,000
Net operating profits .....	90,000
Total.....	\$120,000
Dividends paid .....	25,000
Balance December 31, 1952.....	\$ 95,000

*Instructions:* Prepare working papers that show in detail "Ledger Balance 12/31/53," "Audit Adjustments," "Profit and Loss for Year," and "Balance Sheet 12/31/53." Columns for "Surplus Changes" may be included, or entries to "Surplus" may be shown in the other columns provided such entries are clearly identified as applicable to "Surplus." Key all audit adjustments and in journal form present the adjusting entry together with a brief explanation of the purpose of or the reason for the entry. *There are no posting errors or mathematical errors in the trial balances or in the transactions for the year.* (A.I.A. adapted)

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## Statements from Incomplete Data

### SINGLE ENTRY

The procedures leading to the preparation of accounting statements as illustrated in the preceding chapters are those required in the adoption of a *double-entry system*. This is the characteristic system employed in practice and requires the analysis of each transaction in terms of changes in the fundamental accounting equation,  $\text{Assets} = \text{Liabilities} + \text{Proprietorship}$ . Use of the double-entry system requires a full understanding of the theory of debit and credit.

Double-entry records may not be found in a number of relatively small organizations, particularly sole proprietorships, where the volume of business does not warrant employment of a bookkeeper. For such small units the owner of the business may maintain informal records and may employ an accountant to prepare accounting reports. When transactions are not recorded by means of equal debits and credits, the system employed is known as *single entry*. The single-entry plan that is adopted may vary from a narrative of transactions recorded in a single journal, called a *daybook*, to a relatively complete set of journals, and a ledger providing accounts for all significant items. All of the variations of single-entry bookkeeping encountered in practice cannot be described here. Differences in plans adopted depend upon the needs of the organization and the originality and fancy of the person establishing or maintaining the system.

### RECORDS IN SINGLE-ENTRY BOOKKEEPING

A characteristic single-entry system consists of the following bookkeeping records: (1) a daybook or general journal, (2) a cashbook, and (3) ledger accounts showing debtor and creditor balances. The simplest form of single-entry bookkeeping consists of the daybook in which transactions are explained in chronological order. No accounts are kept. At the other extreme of single-entry procedure a number of journals may be maintained, such as cash journals, sales and purchases journals, returns and allowances journals, and a general journal. Ledger accounts may be kept for debtors, creditors, and the proprietor, as well as for certain other significant items such as sales, purchases, and expenses. The practice, however, falls short of standard double-entry bookkeeping unless each transaction is analyzed and recorded in terms of debit and credit and a trial balance is made available at the end of the period.

Single-entry procedures commonly take the following form. A cashbook is maintained that shows all transactions affecting cash. Instead of naming accounts to be debited or credited as a result of cash receipts and disbursements, a description of the transaction is offered. Transactions not shown in the cashbook are recorded in a daybook in descriptive form. Whenever the account of a debtor, a creditor, or the proprietor is affected, attention is directed to the need for posting by indicating "dr" or "cr" before the amount. Offsetting debits or credits are not shown, since accounts in the ledger are maintained only for customers, creditors, and the owner. No summary of nominal items or of asset and liability balances other than those with persons is available.

In the absence of records offering a complete summary of transactions, the preparation of accurate statements at the end of an operating period presents certain problems. These are discussed in the sections that follow.

#### **BALANCE SHEET PREPARATION**

Since the ledger normally fails to show assets and liabilities other than receivables and payables, it is necessary to refer to other sources in the determination of the remaining balance sheet items. Cash is reported at the balance shown in the cashbook after this figure has been reconciled with the totals of cash on hand and on deposit in the bank. The amounts receivable and payable are summarized from the accounts maintained with debtors and creditors. Merchandise and supplies balances are found by taking inventories. Past statements, cash records, and other documents are reviewed in determining the book values of depreciable assets. Other assets and liabilities, including accrued and deferred items, are determined by a review of the records, including invoices, documents, and other available sources offering evidence or information concerning transactions of the past, present, and future. Proprietorship in double-entry bookkeeping represents a balance arrived at by combining beginning capital, additional investments and withdrawals, and income and expense account balances; in single-entry bookkeeping, it is simply a residual amount, or the total of the values assigned to assets less the total of the liability items.

#### **DETERMINATION OF PROFIT OR LOSS FROM COMPARATIVE BALANCE SHEETS**

In the absence of income and expense accounts, the profit or loss for a fiscal period may be determined by finding the difference between beginning and ending capitals and adjusting this difference by proprietary investments or withdrawals for the period. Beginning

and ending capital balances are taken from the balance sheets prepared at the end of the previous period and at the end of the current period. Investments and withdrawals are ascertained from capital and drawing accounts maintained in the ledger, or in the absence of these, from the cashbook and other memorandum records.

To illustrate the calculation of the profit or loss, assume that comparative balance sheets show capitals as follows: on January 1, \$7,500; on December 31, \$10,000. In the absence of investments or withdrawals by the proprietor, it must be concluded that the profit for the year is \$2,500. However, assume that the proprietor has invested \$1,000 and withdrawn \$3,000 during the year; the profit would then be \$4,500, calculated as follows:

Capital, December 31		\$10,000
Capital, January 1		7,500
Net increase in capital		\$ 2,500
Add excess of proprietor's withdrawals over investments:		
Withdrawals	\$3,000	
Investments	1,000	2,000
		-
Net profit for year		\$ 4,500

An excess of investments over withdrawals would be subtracted from the net increase in capital in calculating the profit.

#### **PREPARATION OF INCOME STATEMENT**

A summary showing the profit or loss calculated from comparative capital balances is generally inadequate for the business unit. The owner needs operating detail to plan affairs successfully. Creditors may insist upon a detailed statement of operations. In addition, governmental agencies require a listing of income and expense items for income tax purposes.

An itemized income statement can be prepared by (1) rewriting transactions in double-entry form or (2) analyzing cash receipts and disbursements together with asset and liability changes. Obviously, little or nothing is saved by the adoption of a single-entry as compared with a double-entry system if transactions are to be rewritten in double-entry form and posted to accounts in the development of income and expense data. When the second procedure is followed, an analysis and summary of all cash receipts and payments is required, unless such a summary is already available as a result of the use of cash journals with special analysis columns. Increases in cash must be classified as: (1) proceeds from cash sales, (2) receipts of other income items, (3) collections on account, (4) proceeds from the sale of assets other

than merchandise, (5) amounts borrowed, and (6) investments by owners. Disbursements are classified as (1) payments on cash purchases of merchandise, (2) payments of other expense items, (3) payments on account, (4) payments for assets other than merchandise, (5) payments of loans, and (6) withdrawals by owners. This information, together with balance sheet data, is used in the preparation of the income statement. The procedures that are employed in determining the various income and expense balances are explained in the section that follows.

*Sales.* The figure to be reported for sales consists of the total of cash sales and sales on account. Sales are calculated from the cash receipts analysis and comparative balance sheet data as follows:

SALES		
Cash sales.....		\$5,500
Sales on account:		
Notes and accounts receivable on hand at the end of the period.....	\$1,500	
Collections on notes and accounts receivable during the period.....	<u>3,000</u>	
	\$4,500	
Deduct notes and accounts receivable on hand at the beginning of the period.....	2,000	2,500
Total sales for the period. ....		<u>\$8,000</u>

Notes and accounts receivable in the foregoing tabulation would be limited to those arising from sales of merchandise.

*Cost of Goods Sold.* The inventory shown on the balance sheet prepared at the end of the preceding fiscal period is reported on the income statement as the beginning inventory.

Purchases consist of cash purchases and purchases on account. Purchases are calculated from the cash payments analysis and comparative balance sheet data as follows:

PURCHASES		
Cash purchases.....		\$1,500
Purchases on account:		
Notes and accounts payable at the end of the period.....	\$2,000	
Payments on notes and accounts payable during the period.....	<u>5,000</u>	
	\$7,000	
Deduct notes and accounts payable at the beginning of the period .....	<u>3,000</u>	4,000
Purchases for the period.....		<u>\$5,500</u>

Notes and accounts payable in the foregoing tabulation would be limited to those arising from purchases of merchandise.

The ending inventory is reported on the income statement at the figure shown on the balance sheet prepared at the close of the current period. Inventories and purchases provide the data necessary in arriving at the cost of goods sold for the period.

*Expense Items.* An expense balance is computed from the analysis of cash payments and comparative balance sheet data. The calculation of the expense items may be made as follows:

EXPENSE ITEMS			
Cash payments representing expense items . .			\$1,000
Add expense amounts not included in payments but chargeable to current period:			
Amount deferred at the beginning of the period	\$250		
Amount accrued at the end of the period	150	400	
			\$1,400
Deduct expense amounts included in payments but not chargeable to current period:			
Amount deferred at the end of the period	\$200		
Amount accrued at the beginning of the period	100	300	
Total expense for the period			\$1,100

*Income Items.* An income balance is calculated from the cash receipts analysis and comparative balance sheet data. The calculation of the income items may be made as follows:

INCOME ITEMS			
Cash receipts representing income items			\$800
Add income amounts not included in receipts but to be credited to current period:			
Amount deferred at the beginning of the period	\$100		
Amount accrued at the end of the period	50	150	
			\$950
Deduct income amounts included in receipts but not to be credited to current period:			
Amount deferred at the end of the period	\$200		
Amount accrued at the beginning of the period	150	350	
Total income for the period			\$600

*Profit and Loss Items Requiring Special Analysis.* The determination of certain profit and loss items, such as bad debts, sales discounts,

and purchases discounts, requires special data in addition to the information offered by cash records and comparative balance sheets. Assume sales data as follows, for example:

Data from cash records:	
Cash sales .....	\$10,000
Collections on accounts receivable arising from sales. ....	42,000
Data from balance sheets:	
Accounts receivable at the beginning of the period .....	14,000
Accounts receivable at the end of the period .....	12,500
Supplementary data from special analysis of records:	
Accounts written off during the period....	600
Sales discounts allowed customers during the period.....	850

The supplementary data indicate that a loss from bad debts of \$600 and sales discounts of \$850 are to be recognized as expenses on the income statement. However, the two amounts should also be added to sales, since there must have been sales equivalent to the reductions in accounts receivable resulting from bad accounts and discounts allowed customers. The total sales for the period are calculated as follows:

SALES	
Cash sales .....	\$10,000
Sales on account:	
Accounts receivable on hand at the end of the period.....	\$12,500
Collections on accounts receivable during the period.....	42,000
Accounts receivable written off during the period.....	600
Accounts receivable reduced by discounts during the period.....	850
	<u>\$55,950</u>
Deduct accounts receivable on hand at the beginning of the period.....	14,000
Total sales for the period.....	\$41,950
	<u>\$51,950</u>

It should be noted that failure to recognize data relating to bad debts and sales discounts will have no effect upon the net profit figure as determined on the income statement. The expense understatement is counterbalanced by an understatement in the income balance, Sales.

When purchases discounts have been received on the payment of purchases invoices, the treatment is similar to that illustrated for sales discounts. The purchases balance is increased by the total of purchases discounts since there must have been purchases equivalent to the reduction in the accounts payable accounts resulting from discounts received.

The charge for depreciation or amortization to be recognized on the income statement requires special analysis of balance sheet as well as cash payments data. For example, assume no purchase or disposal of property during the period and beginning and ending store furniture balances of \$30,000 and \$28,500. Depreciation is reported at \$1,500, the net decrease in the store furniture account. Assume, however, that the following information is assembled at the end of a fiscal period:

Data from cash records:	
Payments for store furniture	\$ 2,500
Data from balance sheets:	
Store furniture at the beginning of the period	32,000
Store furniture at the end of the period	34,200
Installment notes payable arising from purchases of store furniture	4,000

Depreciation is calculated as follows:

#### DEPRECIATION

Balance of store furniture at the beginning of the period		\$32,000
Add acquisitions of store furniture:		
Cash paid on acquisitions of store furniture	\$2,500	
Amounts owed at the end of the period on acquisitions of store furniture	4,000	6,500
Total available		\$38,500
Deduct balance of store furniture at the end of the period		34,200
Depreciation of store furniture for period		\$ 4,300

#### PREPARATION OF STATEMENTS FROM SINGLE-ENTRY DATA ILLUSTRATED

The preparation from single-entry data of (1) a balance sheet, (2) a summary of profit or loss by analysis of capital changes, and (3) an income statement reporting income and expense detail is illustrated in the example that follows. Assume that Edwin C. Hall does not maintain double-entry records. Balance sheet data, analyses of cash receipts and disbursements, and supplementary data required in the development of accounting statements from the single-entry data are assembled at the end of 1953 as shown below and on the next page.

Supplementary data developed from an analysis of business papers include the following:

(1) Purchases discounts of \$600 were received on the payment of creditors invoices during the year.

ASSETS	JANUARY 1 1953	DECEMBER 31 1953
Cash.....	\$ 4,000	\$ 8,500
Accrued Interest Income	60	80
Accounts Receivable	6,000	5,000
Merchandise Inventory	14,000	15,000
Supplies on Hand	400	150
Deferred Interest Expense	—	30
Furniture and Fixtures, cost less depreciation	3,600	5,650
LIABILITIES		
Accrued Salaries	100	50
Notes Payable	—	4,000
Accounts Payable	5,000	6,500
Rentals Received in Advance	100	150

An analysis of the cash records discloses the following:

Balance, January 1, 1953 \$ 4,000

Receipts:

Cash sales	\$ 9,200	
Collections on accounts receivable arising from sales	48,000	
Receipts from rental of store space	1,550	
Interest on balance of cash on deposit	50	
Proceeds from sale of furniture	350	
Proceeds from discounting of own notes at bank	9,850	69,000
		<u>\$73,000</u>

Disbursements:

Payments on accounts payable arising from purchases	\$40,000	
Payments for salaries	4,200	
Payments for rent	4,400	
Payments for supplies	200	
Payments on purchases of furniture and fixtures	3,500	
Payments for miscellaneous expense	1,200	
Payment to bank on notes payable	6,000	
Personal withdrawals	5,000	64,500
Balance, December 31, 1953		<u>\$ 8,500</u>

(2) Proceeds from the sale of a part of the store furniture at the beginning of the year were \$350 as reported in cash receipts. The furniture that was sold had an original cost of \$1,600 and was approximately 50 per cent depreciated.

(3) Proceeds on the issuance of notes to the bank during the year were \$9,850 as reported under cash receipts. The face values of the notes were \$10,000, \$150 being deducted by the bank for interest charges.

A balance sheet prepared from the foregoing data on December 31, 1953, appears below:

EDWIN C. HALL  
BALANCE SHEET  
DECEMBER 31, 1953

ASSETS		LIABILITIES AND PROPRIETORSHIP	
Current assets:		Current liabilities:	
Cash . . . . .	\$ 8,500	Accrued salaries . . . . .	\$ 50
Accrued interest income . . . . .	80	Notes payable . . . . .	4,000
Accounts receivable . . . . .	5,000	Accounts payable . . . . .	6,500
Merchandise inventory . . . . .	15,000		\$10,550
Supplies on hand . . . . .	150		
Deferred interest expense . . . . .	30	Deferred credits:	
	\$28,760	Rentals received in advance . . . . .	150
Fixed assets:		Total liabilities . . . . .	\$10,700
Furniture and fixtures . . . . .	5,650	Proprietorship:	
		E. C. Hall, Capital . . . . .	23,710
Total assets . . . . .	\$34,410		
		Total liabilities and proprietorship . . . . .	\$34,410

The result from operations can be determined by the preparation of a summary of changes in capital as follows:

EDWIN C. HALL  
SUMMARY OF CHANGES IN CAPITAL  
FOR YEAR ENDED DECEMBER 31, 1953

Edwin C. Hall, Capital, December 31, 1953 . . . . .	\$23,710
Edwin C. Hall, Capital, January 1, 1953* . . . . .	22,860
Net increase in capital . . . . .	\$ 850
Add proprietor's withdrawals during year . . . . .	5,000
Net profit for year . . . . .	\$ 5,850

\*Capital, January 1, is calculated as follows:

Assets, January 1 . . . . .	\$28,060
Less liabilities, January 1 . . . . .	5,200
Capital, January 1 . . . . .	\$22,860

An income statement with income and expense detail is shown on page 740. This is followed by schedules in support of the balances reported on the statement.

EDWIN C. HALL  
INCOME STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Sales .....	(A)	\$56,200
Less cost of goods sold:		
Merchandise inventory, January 1 .....		\$14,000
Purchases .....	(B)	42,100
Goods available for sale .....		\$56,100
Less merchandise inventory, December 31 .....		15,000
Cost of goods sold .....		41,100
Gross profit .....		\$15,100
Operating expenses:		
Salaries .....	(C)	\$ 4,150
Rent .....	(D)	4,400
Supplies used .....	(E)	450
Depreciation of furniture and fixtures .....	(F)	650
Miscellaneous expense .....	(G)	1,200
Total operating expenses .....		10,850
Net profit from operations .....		\$ 4,250
Other income:		
Purchases discounts .....	(H)	\$ 600
Interest income .....	(I)	70
Rental income .....	(J)	1,500
Total other income .....		2,170
Other expense:		
Interest expense .....	(K)	120
Net income .....		\$ 6,300
Extraordinary loss:		
Loss on sale of store furniture .....	(L)	450
Increase in capital for year .....		\$ 5,850
(A) Calculation of sales:		
Cash sales .....		\$ 9,200
Sales on account:		
Accounts receivable balance, December 31 .....		\$ 5,000
Collections on account during the year .....		48,000
Deduct accounts receivable balance, January 1 .....		53,000
Total sales for the year .....		47,000
Total sales for the year .....		\$56,200

## (B) Calculation of purchases:

## Purchases on account:

Accounts payable balance, December 31 . . . . .	\$ 6,500
Payments on account during the year . . . . .	40,000
Discounts allowed on creditor payments during the year . . . . .	600
	<hr/>
	\$47,100
Deduct accounts payable balance, January 1 . . . . .	5,000
	<hr/>
Total purchases for the year . . . . .	<u>\$42,100</u>

## Calculation of operating expenses:

## (C) Salaries:

Payments for salaries during the year . . . . .	\$4,200
Add accrued salaries, December 31 . . . . .	50
	<hr/>
	\$4,250
Deduct accrued salaries, January 1 . . . . .	100
	<hr/>
Salaries for the year . . . . .	\$4,150

## (D) Rent:

Payments for rent during the year . . . . .	4,400
---	-------

## (E) Supplies used:

Payments for supplies during the year . . . . .	\$200
Add supplies on hand, January 1 . . . . .	400
	<hr/>
	\$600
Deduct supplies on hand, December 31 . . . . .	150
	<hr/>
Supplies used during the year . . . . .	450

## (F) Depreciation:

Balance of furniture and fixtures on hand, January 1 . . .	\$3,600
Add net increase in furniture and fixtures during the year:	
Furniture and fixture acquisition . . . . .	\$3,500
Furniture and fixture disposal (depre- ciated value) . . . . .	800
	<hr/>
	\$2,700
	<hr/>
	\$6,300
Deduct balance of furniture and fixtures on hand, December 31 . . . . .	5,650
	<hr/>
Depreciation of furniture and fixtures for the year . . .	650

## (G) Miscellaneous expense:

Payments for miscellaneous expense during the year . . . . .	1,200
	<hr/>
Total operating expenses for the year . . . . .	<u>\$10,850</u>

## (H) Purchases discounts:

Purchases discounts received on payments to creditors . . .	\$600
---	-------

## (I) Calculation of interest income:

Interest received during the year.....	\$ 50	
Add accrued interest income, December 31.....	80	
	<u>\$130</u>	
Deduct accrued interest income, January 1.....	60	
Total interest income for the year.....		\$ 70

## (J) Calculation of rental income:

Rentals received during the year.....	\$1,550	
Add rentals received in advance, January 1.....	100	
	<u>\$1,650</u>	
Deduct rentals received in advance, December 31.....	150	
Total rental income for the year.....		<u>\$1,500</u>

## (K) Calculation of interest expense:

Interest charges on notes discounted:		
Face value of notes payable discounted....	\$10,000	
Proceeds from notes.....	9,850	
	<u></u>	
Interest charges for the year.....	\$150	
Deduct deferred interest expense, December 31.....	30	
Total interest expense for the year.....		<u>\$120</u>

## (L) Calculation of extraordinary loss    loss on sale of store furniture:

Depreciated value of store furniture sold.....	\$800	
Proceeds from sale.....	350	
	<u></u>	
Loss on sale of store furniture.....		<u>\$450</u>

**CHANGE FROM  
SINGLE ENTRY  
TO DOUBLE ENTRY**

With the need for adequate accounting records as a result of an increase in the number as well as the complexity of transactions, it often becomes necessary to convert single-entry bookkeeping records into a double-entry system. Such a change may be effected by first drawing up a balance sheet as of the date of change. This statement is used as the basis for a journal entry in compound form with debits to all of the asset accounts and credits to asset allowances, liability accounts, and proprietorship elements. If additional accounts are to be added to an incomplete ledger already in use, folio check marks are made opposite balances that already appear in the ledger; accounts are opened and balances recorded for those items not checked. If new books are to be used, accounts are opened and balances are recorded for all of the items listed in the opening journal entry.

**USE OF SINGLE-ENTRY BOOKKEEPING**

Single entry is discussed here because it represents a system that the accountant frequently encounters when he is called upon to prepare accounting statements, to audit books and records, and to prepare government informational reports and tax returns. Single-entry systems are employed because of their simplicity and economy by relatively small businesses, nonprofit organizations, and persons acting in a fiduciary capacity. A great many individuals maintain records of personal transactions so that statements and tax reports may be prepared periodically, but they seldom maintain these records on a double-entry basis. In all such instances the type of analysis suggested in this chapter is required in developing accounting reports.

The adoption of single-entry bookkeeping cannot be recommended for any but the very simplest types of organization. Among the intrinsic shortcomings of single-entry bookkeeping are the following:

(1) In the absence of a record of transactions in terms of debit and credit, preparation of a trial balance that offers a check of mathematical accuracy is not available.

(2) In the absence of accounts for most of the assets and liabilities, preparation of the balance sheet from miscellaneous sources and memoranda may result in omissions and misstatements.

(3) Without nominal accounts, detailed analysis of transactions is necessary in obtaining operating data. Misstatement of assets and liabilities, particularly the failure to report assets at properly depreciated or amortized balances, affects income and expense and may result in the material misstatement of profit and loss.

(4) There is failure to provide a centralized and co-ordinated system subject to internal check and available for satisfactory and convenient audit by private and governmental auditors.

## QUESTIONS

1. Distinguish between single-entry and double-entry bookkeeping.
2. Describe the records and the nature of recording under typical single-entry bookkeeping.
3. What are the sources of information for balance sheet items when the single-entry plan is followed?
4. John Day has his assets appraised at the end of each year and draws up a balance sheet using such appraisal values. He then calculates the change in capital for the year and adjusts this for investments and withdrawals in arriving at the profit or the loss for the year. In your opinion, does this procedure provide a satisfactory measurement of profit and loss?

5. State how each of the following items is calculated in the preparation of an income statement when single-entry bookkeeping and the accrual basis are followed:

- |                                |                        |
|--------------------------------|------------------------|
| (a) Merchandise sales.         | (e) Insurance expense. |
| (b) Merchandise purchases.     | (f) Interest income.   |
| (c) Depreciation on equipment. | (g) Rental income.     |
| (d) Sales salaries.            | (h) Taxes.             |

6. "Single-entry bookkeeping is obsolete and has no place in modern business." Do you agree? Explain.

7. Give the disadvantages of single-entry bookkeeping as compared with double-entry bookkeeping.

8. Describe the procedure to be followed in changing from a single-entry system to double entry.

### EXERCISES

1. From the following data calculate the interest income balance to be reported on the income statement for the month of December:

	DECEMBER 1	DECEMBER 31
Deferred Interest Income .	\$2	\$20
Accrued Interest Income	4	6

Interest collections during December were \$30.

2. From the following data, calculate the interest expense balance to be reported on the income statement for the month of December:

	DECEMBER 1	DECEMBER 31
Deferred Interest Expense	\$20	\$15
Accrued Interest Expense	30	10

Disbursements for interest during December were \$80.

3. Interest Income is reported on the income statement for 1953 at \$750. Balance sheet data relating to interest income are as follows:

	JAN. 1, 1953	DEC. 31, 1953
Deferred Interest Income .	\$ 25	\$ 10
Accrued Interest Income	260	220

How much cash was collected during 1953 representing interest income?

4. Interest Expense is reported on the income statement for 1953 at \$1,850. Balance sheet data relating to interest expense are as follows.

	JAN. 1, 1953	DEC. 31, 1953
Deferred Interest Expense . . . . .	\$ 45	\$ 60
Accrued Interest Expense . . . . .	250	325

How much cash was paid out during 1953 representing interest expense?

5. On January 1 the capital of J. E. Clay was \$4,800 and on January 31 his capital was \$5,450. During the month Clay withdrew merchandise costing \$150, and on January 25 he paid a \$1,200 note payable of the business with interest at 6% for 3 months with a check drawn on his private

checking account. What was Clay's net profit or loss for the month of January?

6. The Bates Manufacturing Company showed on its balance sheet on December 31, 1953, total capital of \$119,800. During the year 1953 capital was affected by: (1) an adjustment to surplus for a \$200 understatement of profit in 1952, (2) a dividend declared but not paid of \$8,000, and (3) a profit of \$7,600. A capital stock figure of \$100,000 remained unchanged during the year. What was the surplus balance on January 1, 1953?

7. Total accounts receivable for the Star Sales Company were as follows: on January 1, \$5,000; on January 31, \$4,700. In January \$8,000 was collected on accounts, \$600 was received for cash sales, accounts receivable of \$400 were written off as uncollectible, and allowances on sales of \$150 were made. What were the sales to be reported on the income statement for January?

8. The accounts payable balance for A. M. Jones on November 1 was \$2,200; on November 30 the balance was \$2,800. During the month \$300 was paid for cash purchases, \$450 was allowed on purchases returned, \$5,600 was paid on accounts payable, and \$200 was paid representing freight-in. The inventory on November 1 was \$1,000 and on November 30 was \$1,200. What cost of sales information would be reported on the income statement for November?

9. The balance sheet for Kenneth Rhoads on December 31, 1953, is as follows:

KENNETH RHOADS  
BALANCE SHEET  
DECEMBER 31, 1953

Cash	\$ 2,500	Accounts Payable	\$ 5,000
Accounts Receivable	6,000	K. Rhoads, Capital	11,500
Merchandise Inventory	8,000		
	<hr/>		<hr/>
	\$16,500		\$16,500

During 1953 Rhoads withdrew cash of \$6,000 and merchandise costing \$2,500 for his personal use. He paid out \$26,000 to merchandise creditors during the year and paid \$8,000 for operating expenses. Rhoads' balance sheet at the beginning of the year showed only two assets: cash, \$1,500, and merchandise inventory, \$8,500. Prepare an income statement for the year, together with supporting schedules for income and expense items from the data above.

10. The following data are obtained from a single-entry set of books kept by H. C. Turner:

	JAN. 1	DEC. 31		JAN. 1	DEC. 31
Accounts Receivable	\$4,000	\$6,000	Accounts Payable	\$2,000	\$1,200
Inventories	3,500	4,000	Notes Payable		1,000
Prepaid Expenses	300	280	Accrued Expenses	200	250
Store Equipment	3,000	2,700			

The cashbook shows the following information:

Balance, January 1		\$1,500
Receipts:		
Collections on accounts receivable	\$3,000	
Amount borrowed on issuance of note	1,000	4,000
		<hr/>
		\$5,500
Disbursements:		
Withdrawals by owner	\$ 500	
Purchase of store equipment	800	
Payment on accounts payable	3,400	
Payment of expenses	1,000	5,700
		<hr/>
Cash overdraft		\$(200)

(a) Prepare an income statement for 1953

(b) Prepare a schedule to prove the accuracy of the profit or loss figure reported on the income statement.

### PROBLEMS

24-1. The following data are obtained from a single-entry set of books kept by C. R. Crowe:

	JAN. 1	JUNE 30
Accounts receivable	\$4,000	\$ 5,500
Notes receivable	500	800
Accrued interest on notes receivable	85	60
Merchandise inventories	4,000	2,400
Store equipment	3,000	2,850
Accounts payable	2,500	2,000
Notes payable	1,600	1,800
Accrued interest on notes payable	60	45

The cashbook shows the following information:

Balance, January 1		\$ 2,500
Receipts: Accounts receivable	\$7,000	
Notes receivable	2,400	
Interest on notes	100	9,500
	<hr/>	
		\$12,000
Payments: Accounts payable	\$3,800	
Notes payable	3,200	
Interest on notes	120	
Operating expenses	2,000	
Withdrawals	1,000	10,120
		<hr/>
Balance, June 30		\$ 1,880

The following supplementary information is available:

Accounts receivable of \$250 were written off as uncollectible.

Purchases allowances of \$140 were received on merchandise purchases.

*Instructions:* (1) Prepare an income statement accompanied by schedules in support of income and expense totals.

(2) Prove the profit or loss by reconciling beginning and ending capital balances.

**24-2.** The following information is obtained from the single-entry records of Frank Spires:

	JAN. 1	JUNE 30
Accounts receivable .. . . . . .	\$4,500	\$8,250
Notes receivable . . . . .	1,700	1,300
Merchandise inventories . . . . .	3,800	1,000
Prepaid operating expenses . . . . .	50	10
Accrued interest on notes receivable . . . . .	120	100
Store equipment . . . . .	3,250	3,000
Accounts payable . . . . .	3,500	2,250
Notes payable . . . . .	1,000	1,200
Accrued interest on notes payable . . . . .	40	50
Accrued operating expenses . . . . .	270	300
Deferred interest income . . . . .	20	10

A cash book shows the following:

Balance, January 1 . . . . .	\$1,850
Receipts: Accounts receivable . . . . .	\$5,100
Notes receivable . . . . .	1,500
Interest income . . . . .	150
	6,750
	\$8,600
Payments: Accounts payable . . . . .	\$5,500
Notes payable . . . . .	800
Interest expense . . . . .	155
Operating expenses . . . . .	1,650
Frank Spires (withdrawals) . . . . .	600
	8,705
Balance, June 30 . . . . .	\$ 105*

\*Credit

*Instructions:* (1) Prepare an income statement accompanied by schedules in support of income and expense totals.

(2) Prove the profit or loss by reconciling beginning and ending capital balances.

**24-3.** Statements of condition and an analysis of cash from A. M. Smith's incomplete records are prepared as follows:

**BALANCE SHEET OF A. M. SMITH AS OF JANUARY 1, 1953**

Cash.....	\$ 400	Accrued interest on notes payable.....	\$ 3
Accrued interest on notes receivable.....	18	Accounts payable.....	1,300
Accounts receivable.....	3,710	Notes payable.....	1,000
Notes receivable.....	1,450	Accrued wages and salaries.....	70
Merchandise inventory.....	1,500	Unearned interest income.....	7
Unexpired insurance.....	40	A. M. Smith, Capital.....	11,248
Deferred interest expense.....	10		
Delivery equipment.....	1,200		
Buildings.....	2,400		
Land.....	2,900		
	<u>\$13,628</u>		<u>\$13,628</u>

**BALANCE SHEET OF A. M. SMITH AS OF JANUARY 31, 1953**

Cash.....	\$ 463	Accrued interest on notes payable.....	\$ 6
Accrued interest on notes receivable.....	9	Accounts payable.....	1,580
Accounts receivable.....	3,080	Notes payable.....	1,000
Notes receivable.....	1,600	Accrued wages and salaries.....	45
Merchandise inventory.....	1,700	Accrued taxes.....	15
Unexpired insurance.....	65	Unearned interest income.....	2
Deferred interest expense.....	8	A. M. Smith, Capital.....	11,112
Delivery equipment.....	\$1,200		
Less allow. for depr....	25		
	1,175		
Buildings.....	\$2,800		
Less allow. for depr....	40		
	2,760		
Land.....	2,900		
	<u>\$13,760</u>		<u>\$13,760</u>

**CASH**

Jan. 1 Balance.....	400	Jan. Withdrawal by Smith.....	500
Accounts receivable.....	7,800	Building.....	400
Sales.....	1,200	Purchases.....	340
Interest income.....	12	Accounts payable.....	6,000
		Wages and salaries.....	300
		Insurance.....	44
		Miscellaneous operating expense.....	900
		Freight in.....	450
		Interest expense.....	15
		Feb. 1 Balance.....	463
	<u>9,412</u>		<u>9,412</u>
Feb. 1 Balance.....	463		

*Instructions:* (1) Calculate the profit or loss for January by considering the changes in the owner's capital balance.

(2) Prepare an income statement with income and expense detail, supported by schedules showing determination of amounts reported.

24-4. A balance sheet for O. H. Liggett on January 1, 1953, showed the following:

O. H. LIGGETT  
BALANCE SHEET  
JANUARY 1, 1953

Cash	\$ 1,100	Accrued interest on notes payable	\$ 5
Accrued interest on notes receivable	15	Accounts payable	1,510
Notes receivable	1,400	Notes payable	1,200
Accounts receivable	3,060	Accrued wages and salaries	80
Merchandise inventory	1,600	Unearned interest income	8
Unexpired insurance	120	O. H. Liggett, capital	12,504
Deferred interest expense	12		
Delivery equipment	1,500		
Building	4,800		
Land	1,700		
	\$15,307		\$15,307
	= -		= -

On January 31, 1953, the asset and liability balances are:

ASSETS		LIABILITIES	
Cash	\$ 2,240	Accrued interest on notes payable	\$ 7
Accrued interest on notes receivable	12	Notes payable	880
Notes receivable	1,500	Accounts payable	1,500
Accounts receivable	3,200	Accrued wages and salaries	50
Merchandise inventory	1,650	Accrued taxes	60
Unexpired insurance	45	Unearned interest income	6
Deferred interest expense	9		
Delivery equipment	1,455		\$ 2,503
Building	4,776		
Land	2,700		
	\$17,587		

Uncollectible accounts receivable of \$225 were written off during the month. All notes receivable and notes payable arose from merchandise transactions.

Cash receipts and disbursements for the month were:

RECEIPTS		DISBURSEMENTS	
Accounts and notes receivable	\$ 8,800	Land	\$ 1,000
Investment by Liggett	800	Purchases	150
Sales	720	Accounts and notes payable	6,200
Interest income	30	Wages and salaries	350
		Insurance	50
	\$10,350	Miscellaneous operating expense	1,050
		Freight in	400
		Interest expense	10
			\$ 9,210

*Instructions:* (1) Calculate the profit or loss for January by considering the changes in capital.

(2) Prepare an income statement with income and expense detail, supported by schedules showing determination of amounts reported.

24-5. A balance sheet prepared for Adams and Barney on January 1, 1953, had the following balances:

### ADAMS AND BARNEY

#### BALANCE SHEET

JANUARY 1, 1953

Cash.....	\$ 750	Accrued expenses.....	\$ 275
Interest receivable.....	40	Accounts payable.....	5,875
Notes receivable.....	1,400		
Accounts receivable.....	6,600		
Merchandise inventory.....	7,000	Adams, capital.....	6,375
Deferred expenses.....	260	Barney, capital.....	6,725
Furniture and fixtures.....	3,200		
	<u>\$19,250</u>		<u>\$19,250</u>

On December 31, 1953, asset and liability balances are:

ASSETS		LIABILITIES	
Interest receivable.....	\$ 50	Cash overdraft .....	\$ 250
Notes receivable.....	2,000	Accrued expenses .....	140
Accounts receivable.....	7,250	Notes payable .....	2,500
Merchandise inventory.....	7,500	Accounts payable.....	7,270
Deferred expenses.....	280		
Furniture and fixtures.....	4,020		
	<u>\$21,100</u>		<u>\$10,160</u>

Cash receipts and disbursements for the year were:

RECEIPTS		DISBURSEMENTS	
Investment by Adams.....	\$ 1,200	Withdrawals by Adams (\$225 monthly).....	\$ 2,700
Cash sales.....	4,200	Withdrawals by Barney (\$225 monthly).....	2,700
Receipts on accounts and notes.....	\$30,000	On accounts payable... \$22,300	
Less discount allowed.....	400	Less discounts allowed .....	500
	<u>29,600</u>		<u>21,800</u>
Interest on notes.....	80	Purchases of store fixtures on July 1, 1953.....	1,200
Proceeds from own 6-month, \$2,500 note discounted at the bank at 6% on September 1, 1953.....	2,425	Operating expenses.....	10,105
	<u>\$37,505</u>		<u>\$38,505</u>

Deferred interest on the note payable of \$25 is included in the deferred expense total of \$280 on the balance sheet as of December 31.

Bad accounts written off during the year totaled \$370.

Sales returns and allowances were \$690.

*Instructions:* (1) Prepare a balance sheet as of December 31, 1953, supported by a schedule summarizing changes in capital accounts.

(2) Prepare an income statement showing the income and expense detail, supported by schedules to show determination of reported amounts.

24-6. Balance sheets for the Dome Company on January 1 and June 30, 1953, have the following balances:

ASSETS	JANUARY 1	JUNE 30
Cash.....	\$ 15,000	\$ 81,000
Notes receivable.....	20,000	15,000
Accounts receivable.....	75,000	90,000
Merchandise inventories.....	210,000	200,000
Deferred expenses.....	12,000	10,000
Investments (at cost).....	30,000	10,000
Buildings and equipment.....	300,000	320,000
	<u>\$662,000</u>	<u>\$726,000</u>
LIABILITIES AND CAPITAL		
Accrued expenses.....	\$ 3,000	\$ 2,500
Notes payable.....	47,000	57,000
Accounts payable.....	60,000	75,000
Bonds payable.....	50,000	—
Capital stock.....	300,000	350,000
Paid-in surplus.....	100,000	125,000
Earned surplus.....	102,000	116,500
	<u>\$662,000</u>	<u>\$726,000</u>

An analysis of cash receipts and disbursements discloses the following:

RECEIPTS	DISBURSEMENTS
Capital stock..... \$ 75,000	Trade creditors..... \$210,000
Trade debtors..... 235,000	Expenses (operating and other)..... 79,000
Cash sales..... 80,000	Dividends..... 40,000
Notes receivable discounted:	Equipment..... 28,000
face value, \$20,000, proceeds..... 19,500	Bonds..... 50,000
Notes payable discounted:	
face value, \$30,000, proceeds..... 28,500	
Sale of investments..... 26,000	

*Instructions:* (1) Prepare an income statement supported by schedules showing calculation of income and expense balances for the six-month period ended June 30, 1953.

(2) Prove the profit or loss determined in part (1) by the preparation of a statement of earned surplus.

24-7. P. A. Wade, an attorney, prepared the operating statement on page 752 from the information shown in his cash account.

The following facts are ascertained upon inspection of additional informal records that are available:

- (1) On January 1, 1953, clients owed Wade \$2,800; on December 31, 1953, the amounts owed by clients totaled \$2,950.
- (2) Wade collected \$2,100 as a retainer for the period March 1, 1953, to February 28, 1954.

P. A. WADE  
OPERATING STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Cash receipts:	
Collection of fees and retainers.....	\$13,700
Cash disbursements:	
Office salaries.....	\$3,240
Rent.....	1,200
Utilities.....	120
Office supplies.....	100
Miscellaneous expense.....	400
	<hr/>
Total expenses.....	5,060
	<hr/>
Net income for year.....	\$ 8,640

- (3) Rent was paid in advance on the fifteenth of each month. On November 15 rent was increased from \$96 to \$120 per month.
- (4) Office supplies on hand on January 1 were \$25; on December 31, \$40.
- (5) On December 1, Wade received a \$2,000, 90-day note, interest at 6% payable at maturity, in payment for services rendered.
- (6) Salaries are paid on the fifteenth of each month. A secretary was employed throughout the year at \$220 a month. An office clerk was continuously employed since September 16 at \$200 a month.
- (7) Miscellaneous expense includes taxes of \$60 that were paid on September 1 for the taxable year July 1, 1953, to June 30, 1954. At the beginning of the year the amount of prepaid taxes was \$25.
- (8) Furniture and fixtures, cost \$3,200, were acquired on March 1, 1951. Assets are estimated to have a 10-year life.

*Instructions:* Prepare an operating statement on the accrual basis, supported by schedules showing how income and expense balances are determined.

**24-B.** Dr. Jerome L. Terry, a credit dentist, keeps a record of cash receipts and disbursements that shows the following information for 1953:

Receipts:		Payments (continued):	
Collections of fees.....	\$14,200	Laboratory tools.....	\$ 440
Loan from bank.....	2,000	Dental supplies.....	1,370
		Repairs to dental equipment.....	25
Payments:		Advertising.....	2,000
Salaries.....	5,100	Rent.....	1,620
Office supplies.....	246	Utilities.....	150
Office furniture and fixtures.....	800	Miscellaneous expense....	304
Insurance for 1953.....	250	Personal drawings.....	5,600

The following information is obtained from additional informal vouchers and records found in the office:

- (1) Amounts receivable from clients on January 1, 1953, totaled \$750. On December 31, 1953, amounts receivable are \$4,600.
- (2) The dental supplies inventory on January 1 was \$320; on December 31 the inventory is \$440.

- (3) The office supplies inventory on January 1 was \$35; on December 31 the inventory is \$95.
- (4) On December 30, Dr. Terry sold doubtful accounts of \$450 to Commercial Factors for \$200. Cash has not yet been received on the sale. All of the unsold accounts are expected to be fully collectible.
- (5) The loan from the bank was made on October 31 and is due at the end of 3 months with interest at 6%.
- (6) Office furniture and fixtures were purchased on March 31, 1953, and are estimated to last 8 years with no scrap value.
- (7) Estimated depreciation of dental equipment for 1953 was \$360.
- (8) Dental tools were inventoried at \$700 at the beginning of the year; the inventory on December 31 is \$620.
- (9) The office secretary was paid \$200 a month at the end of each month; a laboratory assistant was hired on March 16 and was paid \$300 on the fifteenth of each month.
- (10) Rent was paid in advance on the tenth of each month. Rent was increased on July 10 from \$120 to \$150 monthly.
- (11) Prepaid advertising on December 31 is \$125 and accrued charges for advertising are \$375. No advertising was done in 1952.
- (12) Miscellaneous expense includes personal and property taxes of \$100, paid on August 1, for the taxable year ended June 30, 1954. Prepaid taxes on January 1, 1953, were \$25.

*Instructions:* Prepare an income statement for 1953 on the accrual basis, supported by schedules showing how income and expense balances are determined.

**24-9.** Buxby and Landon are partners in the operation of a retail store. They are concerned about the apparent discrepancy between their income and their volume of sales. Although they maintain incomplete accounting records, their experience in the business suggests to them that there is possible theft or larceny on the part of their staff.

The partners have asked you, in connection with your initial audit (covering the calendar year 1953), to apply such tests as you can to determine whether there is any indication of shortage. In the course of your investigation you obtain the following facts having a bearing on the problem:

- (a) The physical inventory taken December 31, 1953, under your observation, amounted to \$4,442 cost, \$4,171 market. The inventory of December 31, 1952 was \$6,256 cost, \$6,013 market. It has been the firm's practice to value inventory at lower of cost or market, treating any loss or decline in market value as "other expense."
- (b) Using the treatment of "loss or decline in market value" of inventory as mentioned in (a) above, the average gross profit in recent periods has been 35% of net sales. The partners inform you that this per cent seems reasonable and that they expected the same result for 1953, since their mark-up per cent was approximately the same as in the past.

- (c) The December 31, 1952 balance sheet shows accounts receivable of \$2,057. Notes payable to banks and trade accounts payable were combined on the December 31, 1952 balance sheet. They totaled \$9,622. The firm records accounts payable at the net figure, as cash discounts are seldom missed. Purchases have been shown net in past income statements. Sales discounts have been treated as deductions from sales in the past.
- (d) During 1953 accounts were written off in the amount of \$216, and an account for \$148 written off in 1952 was collected and recorded as a regular collection on account.
- (e) Unpaid sales slips show that customers owed \$3,246 on December 31, 1953.
- (f) Unpaid invoices indicate that the firm owed trade creditors \$5,027 at the end of 1953. Record of notes outstanding indicates that \$3,000 was owed to banks on December 31, 1953.
- (g) Sales returns amounted to \$95 and purchase returns amounted to \$272.
- (h) Of the items in the cash records, the following are pertinent:

Receipts:

From customers (after \$272 discounts) . . . . .	\$49,851
From bank loan (net of 60-day, 6% discount) . . . . .	2,970

Disbursements:

To trade creditors (after \$916 cash discounts) . . . . .	38,970
To banks on loans . . . . .	4,000
To customers for returned goods . . . . .	72

*Instructions:* Compute the amount by which the physical inventory is short, assuming the gross profit rate of 35% is reasonable. (A.I.A. adapted)

**24-10.** Paul Canby, a merchant, kept very limited records. Purchases of merchandise were paid for by check, but most other items of cost were paid out of cash receipts. Weekly the amount of cash on hand was deposited in a bank account. No record was kept of cash in the bank, nor was a record kept of sales. Accounts receivable were recorded only by keeping a copy of the sales ticket, and this copy was given to the customer when he paid his account.

Canby had started in business on January 1, 1953, with \$20,000 cash and a building that had cost \$15,000, of which one third was the value of the building site. The building depreciated 4% a year. An analysis of the bank statements showed total deposits, including the original cash investment, of \$130,500. The balance in the bank per bank statement on December 31, 1953, was \$5,300, but there were checks amounting to \$2,150 dated in December but not paid by the bank until January. Cash on hand on December 31 was \$334.

An inventory of merchandise taken on December 31, 1953, showed \$16,710 of merchandise on a cost basis. Tickets for accounts receivable totaled \$1,270, but \$123 of that amount is probably not collectible. Unpaid suppliers' invoices for merchandise amount to \$3,780. During the year Canby had borrowed \$10,000 from his bank, but he repaid by check \$5,000 principal and \$100 interest. He has taken for personal expense \$4,800 from the cash collections. Expenses paid in cash were as follows:

Utilities	\$554
Advertising	50
Sales help (part time)	590
Supplies, stationery, etc.	100
Insurance	234
Real estate taxes	350

Store fixtures with a list price of \$7,000 were purchased early in January on a one-year installment basis. During the year, checks for the down payment and all maturing installments totaled \$5,600. At December 31, the final installment of \$1,525 remains unpaid. The fixtures have an estimated useful life of 10 years.

*Instructions:* Based on the above information, prepare an income statement for 1953, supported by all computations necessary to determine the sales and the purchases for the year. (A.I.A. adapted)

**24-11.** The Hardin Furniture Store (a sole proprietorship) did not have complete records on a double-entry basis. However, from an investigation of its records you have established the information shown below:

- (1) The assets and the liabilities as of December 31, 1952, were:

	DEBIT	CREDIT
Cash	\$ 5,175	
Accounts receivable	10,556	
Allowance for loss on accounts		\$ 740
Fixtures	3,130	
Accumulated depreciation		1,110
Prepaid insurance	158	
Prepaid supplies	79	
Accounts payable		4,244
Accrued miscellaneous expenses		206
Accrued taxes		202
Merchandise inventory	19,243	
Note payable		5,000
Hardin, capital		26,839

- (2) A summary of the transactions for 1953 as recorded in the checkbook shows:

Deposits for the year (including the redeposit of \$304 of checks charged back by the bank)	\$83,187
Checks drawn during the year	84,070
Customers' checks charged back by the bank	304
Bank service charges	22

- (3) The following information is available as to accounts payable:

Purchases on account during year	\$57,789
Returns of merchandise allowed as credits against accounts by vendors . . . . .	1,418
Payments of accounts by check	55,461

- (4) Information as to accounts receivable shows the following:

Accounts written off	\$ 812
Accounts collected	43,083
Balance of accounts December 31, 1953 (of this balance \$700 is estimated to be uncollectible)	11,921

- (5) Checks drawn during the year include checks for the following items:

Salaries .....	\$10,988
Rent .....	3,600
Heat, light, and telephone .....	394
Supplies .....	280
Insurance .....	341
Taxes and licenses .....	1,017
Drawings of proprietor .....	6,140
Miscellaneous expense .....	769
Merchandise purchases .....	2,080
Note payable .....	3,000
	<u>\$28,609</u>

- (6) Merchandise inventory December 31, 1953, was \$17,807. Prepaid insurance amounted to \$122 and supplies on hand amounted to \$105 as of December 31, 1953. Accrued taxes were \$216 and miscellaneous accrued expenses were \$73 at the year end.
- (7) Cash sales for the year are assumed to account for all cash received other than that collected on accounts. Fixtures are to be depreciated at the rate of 10% per annum.

*Instructions:* (1) Prepare a balance sheet as of December 31, 1953.

(2) Prepare an income statement for the year 1953. (A.I.A. adapted)

**24-12.** As of December 31, 1952, the Clyde Manufacturing Company, with outstanding capital stock of \$30,000, had the following assets and liabilities:

Cash .....	\$ 5,000
Accounts receivable .....	10,000
Raw material inventory .....	4,000
Work-in-process inventory .....	2,000
Finished goods inventory .....	6,000
Prepaid expenses .....	500
Fixed assets (net) .....	30,000
Current liabilities .....	17,500

During the year 1953 the surplus account increased 50% as a result of the year's business. No dividends were paid during the year. Balances of accounts receivable, prepaid expenses, current liabilities, and capital stock were the same on December 31, 1953, as they had been on December 31, 1952. Inventories were reduced by exactly 50%, except for the finished goods inventory which was reduced by one third. Fixed assets (net) were reduced by depreciation of \$4,000, charged three fourths to manufacturing expense and one fourth to general expense. Sales were made at 50% above their cost of \$40,000. Direct labor cost was \$9,000 and manufacturing expense amounted to \$11,000. Total general expense and selling expense amounted to 15% and 10% respectively of the gross sales.

*Instructions:* Prepare a balance sheet as of December 31, 1953, and an income statement for the year 1953 including therein or in a separate schedule the details of cost of goods manufactured and sold. Support the formal statements with working papers. (A.I.A. adapted)

## *Errors and Their Correction*

### **PREVENTING MISSTATEMENTS**

A number of special practices are usually adopted by a business unit to insure accuracy in recording and summarizing transactions. A prime requisite, of course, in achieving accuracy is the establishment of an accounting system with procedures that provide safeguards against either carelessness or dishonesty. Such a system should provide for regular and integrated routines. Personnel should have fixed responsibilities. Procedures should provide for checks and controls that offer means for the continuous reconciliation and proof of recorded data. An internal auditing department whose function it is to verify recorded data may be established as a part of the accounting system. Independent public accountants may be engaged for the verification of recorded data and for the development of accounting statements as a further means of insuring accounting accuracy in the accumulation of transaction data and in their summary and presentation.

Despite the accounting system that is established and the verification procedures that are employed, some misstatements will enter into the financial reports. Misstatements may be minor ones whose effects on the presentations are immaterial; others may be of a material nature, resulting in the serious misrepresentation of financial position and the results of operations. Misstatements on the accounting reports may arise from intentional acts on the part of employees or officers to misrepresent the facts or from unintentional acts on the part of employees resulting in inaccuracies or omissions in recorded data.

*Intentional Misstatements.* When incorrect statements result from intentional falsification of entries or records, the motive or motives may be: (1) to evade taxation; (2) to develop statements that will affect the market price of securities issued by the company in a certain manner; (3) to obtain certain favorable decisions of regulatory bodies; (4) to conceal the theft of cash, securities, merchandise, or other assets; (5) to conceal facts that may embarrass management; (6) to make possible more favorable statements for credit purposes; or (7) to develop statements that will provide for higher bonus accruals to management. The best possible accounting system will not prevent misstatements that are made under the direction of managing officials.

*Unintentional Misstatements.* It would be impossible to offer a complete list of the misstatements that might arise unintentionally. Unintentional misstatements arise from clerical errors in recording or from failures in the application of accounting principles. Among the most common errors are postings to the wrong customer or creditor accounts, the recording of activities in the wrong profit or loss account, the failure to state inventories accurately, the omission of depreciation, the failure to distinguish properly between capital and revenue charges, and the failure to recognize all adjustments for accrued and deferred items. These and other unintentional errors can be kept to a reasonable minimum through adequate systems of internal check and satisfactory procedures for the audit and review of accounting data.

The discussion in this chapter is devoted to account misstatements arising from failures in recording or properly summarizing activities and to the accounting procedures that are required upon the discovery of such misstatements.

#### **TYPES OF ERRORS**

Certain errors affect balance sheet data only.

For example, Cash is debited instead of Accounts Receivable. Discovery of the error calls for the correction of the real account balances. Other errors affect income statement data only. For example, Sales Salaries is debited instead of Office Salaries. The discovery of this error before the accounts are closed calls for a correction in the nominal accounts; discovery after the accounts are closed would require no action since the real accounts carried into the new period are accurately stated.

Certain errors affect both balance sheet and income statement data. Such errors fall into two classes:

- (1) Those errors that, when not detected, are counterbalanced in the regular course of bookkeeping in the succeeding fiscal period. The income statements for two successive periods are incorrect; the balance sheet at the end of the first period is incorrect, but the balance sheet at the end of the succeeding period is correctly stated. Examples of such errors are: the misstatement of inventories, the omission of adjustments for accrued income and expense items, and the omission of adjustments for deferred income and expense items.
- (2) Those errors that affect both the income statement and the balance sheet but that are not counterbalanced in the regular course of bookkeeping during the subsequent period. Balance sheets prepared after the error is made are incorrect until

entries are made to compensate for or to correct such errors. In this class are such errors as the misstatement of depreciation and the recognition of a capital expenditure as a revenue expenditure or vice versa.

When errors affecting both balance sheet and income statement accounts are discovered, they must be carefully analyzed to determine the action that is required in correcting the accounts.

Errors are generally discovered when the periodic adjusting entries are being made, when an audit is being undertaken, when a business is to be sold, when a change of ownership is made in a partnership, when questions of taxation are to be decided, when heirs of an estate are to be satisfied, or when a merger or a consolidation of two or more concerns is contemplated or accomplished.

**CORRECTING ENTRIES** It has been observed in earlier chapters that two procedures are available in correcting accounts for errors in profits of prior periods: (1) If the clean surplus approach is to be followed and modification of past profits is to be reflected in a special section on the income statement, corrections are summarized in nominal accounts that are ultimately transferred to Earned Surplus. (2) If the income statement is to be limited to the presentation of normally recurring activities or to transactions of the current period and if errors in past profits are viewed as requiring correction in the account that now reflects such profits, corrections are recorded directly in the earned surplus account. When the latter practice is followed, the earned surplus statement will display changes in earned surplus resulting from recognition of errors in past profit measurements. Analysis of the earned surplus account is required in providing the detail for the development of this statement. In the examples in this chapter, to simplify presentations it will be assumed that corrections are recorded directly in Earned Surplus.

It may be observed that, in practice, no action is generally taken in the accounts upon the discovery of errors that do not involve material amounts and that will be counterbalanced in the normal course of accounting. Justification for such a procedure is made on the grounds of expediency. In the illustrations in this chapter, however, it is assumed that corrections are to be made in the accounts for all errors that are discovered.

The entries that are required in correcting errors are illustrated in the example that follows. The errors to be considered are representative of those that are frequently found.

Assume that the books of the Monarch Wholesale Co. are reviewed in 1954 before the accounts for 1954 have been adjusted and closed. During the course of review, the errors that are listed below and on the following pages are discovered.

(1) *Misstatement of Merchandise Inventory.* It is discovered that the merchandise inventory as of December 31, 1952, was understated by \$1,000. The effects of the misstatement were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Cost of Goods Sold Overstated (Ending Inventory too low) Net Income Understated	Assets Understated (Inventory too low) Surplus Understated
For 1953: Cost of Goods Sold Understated (Beginning Inventory too low) Net Income Overstated	Balance sheet items not affected, surplus understatement for 1952 being corrected by profit overstatement for 1953.

Since the balance sheet items at the end of 1953 were correctly stated, no entry to correct the accounts is required in 1954, the error made in 1952 having been counterbalanced by the misstatement in 1953.

If the error had been discovered in 1953 instead of 1954, an entry would have been made to correct the account balances in order that the transactions for 1953 might be reported accurately notwithstanding past errors. The correcting entry to increase the inventory and Earned Surplus would have been made as follows in 1953:

Merchandise Inventory . . . . .	1,000
Earned Surplus . . . . .	1,000

(2) *Misstatement of Merchandise Purchases.* It is discovered that a purchase invoice as of December 28, 1952, for \$500 was not recorded until 1953. The goods were included in the inventory at the end of 1952. The effects of the failure to record the purchase were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Cost of Goods Sold Understated (Purchases too low) Net Income Overstated	Liabilities Understated (Accounts Payable too low) Surplus Overstated
For 1953: Cost of Goods Sold Overstated (Purchases too high) Net Income Understated	Balance sheet items not affected, surplus overstatement for 1952 being corrected by profit understatement for 1953.

Since the balance sheet items at the end of 1953 were correctly stated, no entry to correct the accounts is required in 1954.

If the error had been discovered in 1953 instead of 1954, a correcting entry would have been necessary. In 1953 Purchases was debited and Accounts Payable credited for \$500 for merchandise acquired in 1952 and included in the ending inventory for 1952. Earned Surplus would have to be reduced by \$500, representing the profit overstatement for 1952, and Purchases would have to be credited for a similar amount to reduce Purchases to the cost of merchandise acquired in 1953. The correcting entry in 1953 would have been:

Earned Surplus. . . . .	500	
Purchases . . . . .		500

(3) *Failure to Record Deferred Expense.* It is discovered that interest expense for 1952 included \$50 that should have been deferred in adjusting the accounts on December 31, 1952. The effects of the failure to record the deferred expense were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Expenses Overstated (Interest Expense too high)	Assets Understated (Deferred Interest Expense not reported)
Net Income Understated	Surplus Understated
For 1953: Expenses Understated (Interest Expense too low)	Balance sheet items not affected, surplus understatement for 1952 being corrected by profit overstatement for 1953.
Net Income Overstated	

Since the balance sheet items at the end of 1953 were correctly stated, no entry to correct the accounts is required in 1954.

If the error had been discovered in 1953 instead of 1954, a correcting entry would have been necessary. If the deferred interest expense had been properly recorded at the end of 1952, the balance in this account would have been transferred to the debit side of the interest expense account by means of a reversing entry at the beginning of 1953. This would have to be recognized in preparing the correcting entry. Interest Expense, then, would have to be debited for \$50, the expense relating to operations of 1953, and Earned Surplus would have to be credited for a similar amount representing the profit understatement for 1952. The correcting entry in 1953 would have been:

Interest Expense. . . . .	50	
Earned Surplus. . . . .		50

(4) *Failure to Record Accrued Income.* Accrued interest on notes receivable of \$20 was overlooked in adjusting the accounts on December 31, 1952. The income was recognized when the interest was collected in 1953. The effects of the failure to record the accrued income were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Income Understated (Interest Income too low) Net Income Understated	Assets Understated (Accrued Interest on Notes Receivable not reported) Surplus Understated
For 1953: Income Overstated (Interest Income too high) Net Income Overstated	Balance sheet items not affected, surplus understatement for 1952 being cor- rected by profit overstatement for 1953.

Since the balance sheet items at the end of 1953 were correctly stated, no entry to correct the accounts is required in 1954.

If the error had been discovered in 1953 instead of 1954, an entry would have been necessary to correct the account balances. If the accrued interest on notes receivable had been properly recorded at the end of 1952, the balance in the asset account would have been transferred to the debit side of the interest income account by means of a reversing entry at the beginning of 1953. The debit in Interest Income would have been offset against interest collections reported on the credit side of the account in determining the amount actually earned in 1953. The effect of the reversing entry would have to be recognized in preparing the correcting entry. Interest Income would have to be debited for \$20, the income accrued in 1952 and to be subtracted from receipts of 1953, and Earned Surplus would be credited for a similar amount representing the profit understatement for 1952. The correcting entry in 1953 would have been:

Interest Income	20	
Earned Surplus		20

(5) *Overstatement of Deferred Expense.* On January 2, 1952, \$180 representing insurance for a three-year period was paid. The charge was made to the asset account Unexpired Insurance. No adjustment was made at the end of 1952. At the end of 1953, the unexpired insurance account was reduced to the unexpired balance on that date, \$60, insurance for two years or \$120 being charged to operations of 1953. The effects of the misstatements were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Expenses Understated (Insur- ance Expense not reported) Net Income Overstated	Assets Overstated (Unexpired Insurance too high) Surplus Overstated
For 1953: Expenses Overstated (Insur- ance Expense too high) Net Income Understated	Balance sheet items not affected, surplus overstatement for 1952 being cor- rected by profit understatement for 1953

Since the balance sheet items at the end of 1953 were correctly stated, no entry to correct the accounts is required in 1954.

If the error had been discovered in 1953 instead of 1954, an entry would have been necessary to correct the account balances. Earned Surplus and Unexpired Insurance would have been decreased for the expired insurance of \$60 relating to 1952 by the following entry in 1953:

Earned Surplus	60
Unexpired Insurance	60

The expired insurance of \$60 for 1953 would have been recorded at the end of that year by an appropriate adjustment.

(6) *Failure to Record Deferred Income.* Unearned interest on notes receivable of \$75 as of December 31, 1952, and \$125 as of December 31, 1953, were overlooked in adjusting the accounts on each of these dates. Interest Income had been credited for interest receipts. The effects of the failure to recognize the income of \$75 that was to be deferred at the end of 1952 were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Income Overstated (Interest Income too high) Net Income Overstated	Liabilities Understated (Unearned Interest Income not reported) Surplus Overstated
For 1953: Income Understated (Interest Income too low) Net Income Understated	Balance sheet items not affected, surplus overstatement for 1952 being corrected by profit understatement for 1953.

The effects of the failure to recognize the deferred income of \$125 at the end of 1953 were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1953: Income Overstated (Interest Income too high) Net Income Overstated	Liabilities Understated (Unearned Interest Income not reported) Surplus Overstated

No entry is required in 1954 to correct the accounts for the failure to record the deferred income at the end of 1952, the misstatement in 1952 having been counterbalanced by the misstatement in 1953. An entry is required, however, to correct the accounts for the failure to record the deferred income at the end of 1953 if the profit for 1954 is not to be misstated. If the deferred income had been recorded at the end of 1953, the balance in Unearned Interest Income would have been transferred to the credit side of the interest income account by means of a reversing entry at the beginning of 1954. This must be recognized in recording the correcting entry. Earned Surplus must be debited for

\$125, representing the profit overstatement for 1953, and Interest Income must be credited for the same amount, representing the income that is to be identified with 1954. The correcting entry is:

Earned Surplus.....	125	
Interest Income.....		125

If the failure to adjust the accounts for the deferred income of 1952 had been recognized in 1953 instead of 1954, an entry similar to the one above would have been required in 1953 to correct the account balances. The entry at that time would have been:

Earned Surplus.....	75	
Interest Income.....		75

(7) *Failure to Record Accrued Expense.* Accrued sales salaries of \$240 as of December 31, 1952, and \$210 as of December 31, 1953, were overlooked in adjusting the accounts on each of these dates. Sales Salaries is debited for salary payments. The effects of the failure to record the accrued expense of \$240 as of December 31, 1952, were as follows:

INCOME STATEMENT		BALANCE SHEET
For 1952: Expenses Understated (Sales Salaries too low)		Liabilities Understated (Accrued Salaries not reported)
Net Income Overstated		Surplus Overstated
For 1953: Expenses Overstated (Sales Salaries too high)		Balance sheet items not affected, surplus overstatement for 1952 being corrected by profit understatement for 1953.
Net Income Understated		

The effects of the failure to recognize the accrued expense of \$210 on December 31, 1953, were as follows:

INCOME STATEMENT		BALANCE SHEET
For 1953: Expenses Understated (Sales Salaries too low)		Liabilities Understated (Accrued Salaries not reported)
Net Income Overstated		Surplus Overstated

No entry is required in 1954 to correct the accounts for the failure to record the accrued expense at the end of 1952, the misstatement in 1952 having been counterbalanced by the misstatement in 1953. An entry is required, however, to correct the accounts for the failure to record the accrued expense at the end of 1953 if the profit of 1954 is not to be misstated. If the accrued expense had been recorded at the end of 1953, the balance in Accrued Salaries would have been transferred to the credit side of the sales salaries account by means of a reversing entry at the beginning of 1954. This must be recognized in

recording the correcting entry. Earned Surplus must be debited for \$210, representing the profit overstatement for 1953, and Sales Salaries must be credited for a similar amount, representing the expense accruing in 1953 and to be subtracted from salary payments in 1954. The correcting entry is:

Earned Surplus.....	210	
Sales Salaries.....		210

If the failure to adjust the accounts for the accrued expense of 1952 had been recognized in 1953, an entry similar to the one above would have been required in 1953 to correct the account balances. The entry in 1953 would have been:

Earned Surplus.....	240	
Sales Salaries.....		240

(8) *Failure to Record Depreciation.* Depreciation of delivery equipment costing \$500 was overlooked at the end of 1952 and 1953. The equipment has an estimated five-year life. The effects of the failure to record depreciation for 1952 were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Expenses Understated (Depreciation of Delivery Equipment too low)	Assets Overstated (Allowance for Depreciation of Delivery Equipment too low)
Net Income Overstated	Surplus Overstated
For 1953: Expenses Not Affected	Assets Overstated (Allowance for Depreciation of Delivery Equipment too low)
Net Income Not Affected	Surplus Overstated

It should be observed that misstatement of income as a result of failure to record depreciation is not counterbalanced in the succeeding year. As a result, asset and surplus balances require correction whenever the failure is discovered.

Failure to record depreciation for 1953 affected the statements as shown below:

INCOME STATEMENT	BALANCE SHEET
For 1953: Expenses Understated (Depreciation of Delivery Equipment too low)	Assets Overstated (Allowance for Depreciation of Delivery Equipment Understated)
Net Income Overstated	Surplus Overstated

When the omission is recognized, Earned Surplus must be reduced and the allowance for depreciation must be increased by the total amount of depreciation that should have been recorded. The correcting entry in 1954 for depreciation that should have been recognized for 1952 and 1953 is as follows:

Earned Surplus.....	200
Allowance for Depreciation of Delivery Equipment ..	200

(9) *Overstatement of Deferred Income.* Unearned Rental Income was credited for \$240 representing income for December, 1953, and for January and February, 1954. No adjustment was made on December 31, 1953. The effects of the failure to adjust the accounts to show income of \$80 for 1953 were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1953: Income Understated (Rental Income too low)	Liabilities Overstated (Unearned Rental Income too high)
Net Income Understated	Surplus Understated

When the error is discovered in 1954, Unearned Rental Income is reduced by the income that should have been recognized in 1953 and Earned Surplus is increased by the following entry:

Unearned Rental Income .....	80
Earned Surplus .....	80

(10) *Failure to Provide an Allowance for Bad Debts.* The company has recognized losses on accounts receivable in the period in which accounts were determined to be uncollectible, as follows:

	IN 1952	IN 1953
Accounts originating from:		
Sales of 1952	\$100	\$260
Sales of 1953	—	150
	\$100	\$410

In addition to the losses recognized in 1952 and 1953, it is estimated that additional losses will be incurred as follows: on 1952 accounts, \$120; on 1953 accounts, \$250.

The effects of the failure to recognize the full amount of uncollectibles relating to 1952 income were as follows:

INCOME STATEMENT	BALANCE SHEET
For 1952: Expenses Understated (Bad Debts too small)	Assets Overstated (Allowance for Bad Debts not reported)
Net Income Overstated	Surplus Overstated
For 1953: Expenses Overstated (Bad Debts of previous year recognized currently)	Assets Overstated (Allowance for Bad Debts not reported)
Net Income Understated	Surplus Overstated (overstatement of in- come for previous year counterbalanced only in part by profit understatement currently)

It should be observed that the misstatement of income as a result of the failure to relate bad debt losses to the period in which the account receivable arose may not be counterbalanced in the succeeding year. As a result, special analysis is necessary in determining the correction that is required in asset and surplus account balances. Failure to recognize uncollectibles relating to 1953 had the following effects:

INCOME STATEMENT		BALANCE SHEET	
For 1953: Expenses Understated (Bad Debts too small)	(Bad Debts too small)	Assets Overstated (Allowance for Bad Debts not reported)	(Allowance for Bad Debts not reported)
Net Income Overstated		Surplus Overstated	

The correcting entry in 1954 requires analysis of the extent to which past failures to recognize uncollectibles were counterbalanced by charges in later periods; Earned Surplus is debited and Allowance for Bad Debts is credited for charges that have not been made to prior operations and that are expected to emerge in the course of realization of receivables. Required charges and actual charges are summarized as follows:

	1952	1953	TOTAL
Required charges:			
Losses already recognized	\$360	\$150	\$510
Losses still anticipated	120	250	370
Amounts chargeable to each year	\$480	\$400	\$880
Amounts charged to each year	100	410	510
Charge understatement (overstatement)	\$380	\$(10)	\$370

The correcting entry in 1954 is:

Earned Surplus	.....	370	
Allowance for Bad Debts			370

If the failures to provide for uncollectibles were recognized in 1953, the entry to correct account balances would be as follows:

Earned Surplus	..	380	
Allowance for Bad Debts			380

The allowance would then have been raised at the end of 1953 by the provision for bad debts relating to 1953 receivables, \$250, and reduced by the accounts receivable of 1952 written off, \$260, thus producing a balance in the allowance account of \$370 at the beginning of 1954.

The analysis sheet on pages 768 and 769 summarizes the effects of the errors that are listed on pages 760 to 767. Effects on the financial statements are listed on the assumption that the errors were not discovered in 1952, 1953, or 1954. A "+" sign indicates an overstatement in the statement section; a "-" sign indicates an understatement in the statement section.

# ANALYSIS SHEET TO SHOW EFFECTS

	AT END OF 1952			
	INCOME STATEMENT		BALANCE SHEET	
	SECTION	NET INCOME	SECTION	EARNED SURPLUS
(1) Understatement of Merchandise Inventory of \$1,000 on December 31, 1952.	Cost of Goods Sold +	-	Current Assets -	-
(2) Failure to record merchandise of \$500 purchased on account in 1952; purchase was recorded in 1953.	Cost of Goods Sold -	+	Current Liabilities -	+
(3) Failure to record Deferred Interest Expense of \$50 on December 31, 1952; amount was included as Interest Expense.	Other Exp. +	-	Current Assets -	-
(4) Failure to record Accrued Interest on Notes Receivable of \$20 on December 31, 1952; income was recognized on collection in 1953.	Other Income -	-	Current Assets -	-
(5) Failure to record Insurance Expense of \$60 in 1952, insurance for 1952 and 1953 of \$120 being charged to 1953.	General Exp. -	+	Current Assets +	+
(6) Failure to record Unearned Interest Income, amounts received being shown as income. On December 31, 1952, \$75.	Other Income +	+	Deferred Credits	+
On December 31, 1953, \$125.				
(7) Failure to record Accrued Sales Salaries; expense was recognized when payment was made. On December 31, 1952, \$240.	Selling Exp. -	+	Current Liabilities -	+
On December 31, 1953, \$210.				
(8) Failure to record Depreciation of Delivery Equipment. On December 31, 1952, \$100.	Selling Exp. -	+	Fixed Assets +	+
On December 31, 1953, \$100.				
(9) Failure to record Rental Income of \$80 for 1953; Unearned Rental Income was credited for amount received. (It is assumed that \$240 is recognized as income in 1954.)				
(10) Failure to recognize additional bad debt loss of \$380 relating to 1952 and emerging in 1953 and thereafter.	General Exp. -	+	Current Assets +	+
Failure to recognize additional bad debt loss of \$250 relating to 1953 and emerging in 1954 and thereafter.				

# OF ERRORS ON STATEMENTS

AT END OF 1953				AT END OF 1954			
INCOME STATEMENT		BALANCE SHEET		INCOME STATEMENT		BALANCE SHEET	
SECTION	NET INCOME	SECTION	EARNED SURPLUS	SECTION	NET INCOME	SECTION	EARNED SURPLUS
Cost of Goods Sold -	+		No Effect				
Cost of Goods Sold +	-		No Effect				
Other Exp. -	+		No Effect				
Other Income +	+		No Effect				
General Exp. +	-		No Effect				
Other Income -	-		No Effect				
Other Income +	+	Deferred Credits -	+	Other Income -			No Effect
Selling Exp. +	-		No Effect				
Selling Exp. -	+	Current Liab. +	+	Selling Exp. +			No Effect
	No Effect	Fixed Assets +	+		No Effect	Fixed Assets +	+
Selling Exp. -	+	Fixed Assets +	+		No Effect	Fixed Assets +	+
Other Income -	-	Deferred Credits +		Other Income +	+		No Effect
General Exp. +		Current Assets +	+	General Exp. +	-		No Effect*
General Exp. -	+	Current Assets +	+	General Exp. +	-	Current Assets +	+

\*It is assumed that all of the 1952 accounts are collected or written off prior to the end of 1954.

**CORRECTION OF SURPLUS**

It is assumed in the following sections that the errors previously listed are discovered in 1954 before the accounts for the year are adjusted and closed. Accounts must be corrected so that the asset, liability, and capital accounts may be stated accurately and so that income and expense balances may reflect balances identified with the current period. Instead of preparing a separate entry for each correction, a single compound entry is generally made for all of the errors that are discovered. The corrected surplus and profit or loss balances of past years, as well as the data to correct the books at the time the errors are discovered, may be obtained by the preparation of working papers. Assume the following earned surplus account for the Monarch Wholesale Co.:

EARNED SURPLUS					
Dec. 20, 1953	Div. Declared . . .	2,000	Dec. 31, 1952	Balance . . . . .	3,000
Dec. 31, 1953	Balance . . . . .	3,500	Dec. 31, 1953	Net Income . . . .	2,500
		5,500			5,500
			Jan. 1, 1954	Balance . . . . .	3,500

The working papers to determine the corrected surplus balance on December 31, 1952, and the actual net income for 1953 are shown on page 771.

The working papers indicate that Earned Surplus is to be reduced by \$825 as of January 1, 1954. The reduction arises from the following:

Earned Surplus overstatement as of Dec. 31, 1952		
Earned Surplus as of the date as originally reported . .	\$3,000	
Earned Surplus as of this date as corrected . . . . .	2,715	\$285
Earned Surplus overstatement in 1953		
Net income as originally reported . . . . .	\$2,500	
Net income as corrected . . . . .	1,960	540
Earned Surplus overstatement as of January 1, 1954 . .		\$825

The following entry is made from the working papers in correcting the account balances in 1954:

Earned Surplus . . . . .	825	
Unearned Rental Income . . . . .	80	
Interest Income . . . . .		125
Sales Salaries . . . . .		210
Allowance for Depreciation of Delivery Equipment . .		200
Allowance for Bad Debts . . . . .		370

The debit to Earned Surplus corrects this balance for overstatement of profits in past periods. The debit to Unearned Rental Income re-

MONARCH WHOLESALE CO.  
WORKING PAPERS FOR CORRECTION OF ACCOUNT BALANCES  
DECEMBER, 1954

EXPLANATION	SURPLUS DEC. 31, 1952		PROFIT AND LOSS YEAR ENDED DEC. 31, 1953		ACCOUNTS REQUIRING CORRECTION IN 1954		
	DR.	CR.	DR.	CR.	DR.	CR.	ACCOUNT
Reported Earned Surplus Balance, Dec. 31, 1952 .....		3,000					
Reported Net Income for Year Ended Dec. 31, 1953 .....				2,500			
Corrections <sup>1</sup> :							
(1) Understatement of inventory on Dec. 31, 1952, \$1,000 .....		1,000	1,000				
(2) Failure to record merchandise purchases in 1952, \$500 .....	500			500			
(3) Failure to record Deferred Inter- est Expense on Dec. 31, 1952, \$50 .....		50	50				
(4) Failure to record Accrued Inter- est on Notes Receivable on Dec. 31, 1952, \$20 .....		20	20				
(5) Failure to record Insurance Expense on Dec. 31, 1952, \$60, insurance of \$120 for 1952 and 1953 being charged to 1953 ...	60			60			
(6) Failure to record Unearned Interest on Notes Receivable:							
(a) On Dec. 31, 1952, \$75 ...	75			75			
(b) On Dec. 31, 1953, \$125 ...			125		125		Interest Income
(7) Failure to record Accrued Sales Salaries:							
(a) On Dec. 31, 1952, \$240 ..	240			240			
(b) On Dec. 31, 1953, \$210 ..			210		210		Sales Salaries
(8) Failure to record Depreciation of Delivery Equipment:							
(a) On Dec. 31, 1952, \$100 ..	100				100		Allowance for Depr. of Delivery Equip.
(b) On Dec. 31, 1953, \$100 ...			100		100		
(9) Failure to record Rental In- come on Dec. 31, 1953, \$80 ...				80	80		Unearned Rental In- come
(10) (a) Allowance requirement, 1952 .....	380					380	Allowance for Bad Debts
(b) 1952 losses charged to 1953 .....				260	260		
(c) Allowance requirement, 1953 .....			250			250	
	1,355	4,070	1,755	3,715	340	1,165	
Corrected Earned Surplus Bal- ance, Dec. 31, 1952 .....	2,715						
	4,070	4,070					
Corrected Net Income for 1953			1,960				
			3,715	3,715			
Net Correction to Earned Sur- plus as of January 1, 1954 .....					825		Earned Surplus
					1,165	1,165	

<sup>1</sup>For more detailed description of errors and their corrections, refer to pages 760 to 767.

duces this balance to the rentals unearned at the beginning of 1954. Interest Income is credited for the amount received in 1953 but applicable to 1954. Sales Salaries is credited for the salaries that had accrued at the end of 1953 but that are not to be paid until 1954. Allowance for Depreciation of Delivery Equipment is credited for depreciation that should have been recorded in 1952 and 1953. Allowance for Bad Debts is credited for receivables estimated to be uncollectible.

After recording the correcting entry, Earned Surplus will appear with a balance of \$2,675 as follows:

EARNED SURPLUS					
1954	Corrections in profits of prior periods discovered during the course of audit	825	Jan. 1, 1954	Balance	3,500

By reconstructing the surplus account from the detail shown on the working papers, this balance may be proved to be correct. If the surplus balance as of December 31, 1952, and the profit of 1953 had been reported properly, Earned Surplus would have appeared as follows:

EARNED SURPLUS					
Dec. 20, 1953	Div. declared	2,000	Dec. 31, 1952	Corrected balance per working papers	2,715
Dec. 31, 1953	Balance	2,675	Dec. 31, 1953	Corrected net income for 1953 per working papers	1,960
		4,675			4,675
			Jan. 1, 1954	Balance	2,675

In the foregoing example, a corrected profit figure for only the preceding year, 1953, was required; hence any corrections in years prior to this date were shown as affecting the surplus balance as of December 31, 1952. Working papers on page 771 were constructed to summarize this information by providing a pair of columns for surplus as of December 31, 1952, and a pair of columns for profit and loss data for 1953. Frequently, it is desirable to determine corrected operating results for a number of years. When this is to be done, a pair of columns must be provided for surplus as of the beginning of the period under review and a separate pair of profit and loss columns

for each year for which a corrected profit or loss balance is to be determined. For example, assume that an analysis of errors is to be made and that corrected profit and loss figures for the years 1951, 1952, and 1953 are to be determined. Working papers for the correction of account balances would be constructed with headings as shown below. The omission of accrued salaries for a four-year period is listed below to illustrate the process of correction.

EXPLANATION	SURPLUS DEC. 31, 1950		PROFIT AND LOSS YR. ENDED DEC. 31, 1951		PROFIT AND LOSS YR. ENDED DEC. 31, 1952		PROFIT AND LOSS YR. ENDED DEC. 31, 1953		ACCOUNTS REQUIRING CORRECTION IN 1954		
	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	ACCOUNT
Failure to record accrued sales sala- ries:											
End of:											
1950, \$150	150			150							
1951, \$160			160			160					
1952, \$180					180			180			
1953, \$125							125		125		Sales Salaries

### CORRECTION OF STATEMENTS OF PRIOR YEARS

It is frequently desirable to prepare corrected statements for past years, particularly when comparisons and analyses of balance sheets and operating data for several years are to be made. In preparing corrected statements, working papers for each statement for each year are prepared.

The preparation of corrected statements for the Monarch Wholesale Co. for 1953 is illustrated in the remaining pages of this chapter. The data affecting statements of 1953 and to be recognized in correcting the balance sheet and the income statement are:

- (1) Understatement of Inventory on December 31, 1952, \$1,000.
- (2) Failure to record Purchases in 1952, \$500.
- (3) Failure to record Deferred Interest Expense on December 31, 1952, \$50.
- (4) Failure to record Accrued Interest on Notes Receivable on December 31, 1952, \$20.
- (5) Failure to record Insurance Expense on December 31, 1952, \$60, insurance of \$120 for 1952 and 1953 being charged to 1953.

## (6) Failure to record Unearned Interest on Notes Receivable:

- (a) On December 31, 1952, \$75.
- (b) On December 31, 1953, \$125.

## (7) Failure to record Accrued Sales Salaries:

- (a) On December 31, 1952, \$240.
- (b) On December 31, 1953, \$210.

## (8) Failure to record Depreciation of Delivery Equipment:

- (a) On December 31, 1952, \$100.
- (b) On December 31, 1953, \$100.

## (9) Failure to record Rental Income on December 31, 1953, \$80.

## (10) Failure to provide Allowance for Bad Debts:

- (a) Estimated loss from bad debts relating to 1952 accounts, \$380, bad debts of \$260 for 1952 being charged to 1953.
- (b) Estimated loss from bad debts relating to 1953 accounts, \$250.

Working papers for the preparation of a corrected income statement for 1953 are shown below:

MONARCH WHOLESALE CO.  
WORKING PAPERS FOR CORRECTED INCOME STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

ACCOUNT	BALANCES BEFORE CORRECTION		CORRECTIONS		CORRECTED BALANCES	
	DR.	CR.	DR.	CR.	DR.	CR.
Sales .....		65,000				65,000
Mdse. Inv., Jan. 1, 1953 .....	15,000		(1) 1,000		16,000	
Purchases .....	40,000			(2) 500	39,500	
Mdse. Inv., Dec. 31, 1953 .....		12,000				12,000
Sales Salaries .....	5,000		(7b) 210	(7a) 240	4,970	
Delivery Expense ..	3,000		(8b) 100		3,100	
Adm. and Office Salaries .....	5,590				5,590	
Loss from Bad Debts	410		(10b) 250	10a) 260	400	
Other General Expense .....	4,000			(5) 60	3,940	
Interest Income .....		500	(4) 20 (6b) 125	(6a) 75		430
Rental Income .....		1,000	(3) 50	(9) 80		1,080
Interest Expense .....	1,600				1,650	
Sales Discounts .....	1,400				1,400	
Net Income .....	2,500		(2) 500 (5) 60 (6a) 75 (7a) 240 (9) 80 (10a) 260	(1) 1,000 (3) 50 (4) 20 (6b) 125 (7b) 210 (8b) 100 (10b) 250	1,960	
	78,500	78,500	2,970	2,970	78,510	78,510

The corrected income statement prepared from the working papers would appear as follows:

MONARCH WHOLESALE CO.  
CORRECTED INCOME STATEMENT  
FOR YEAR ENDED DECEMBER 31, 1953

Sales		\$65,000
Cost of goods sold:		
Merchandise inventory, January 1, 1953	\$16,000	
Add: Merchandise purchases	39,500	
	—	
Merchandise available for sale	\$55,500	
Deduct: Merchandise inventory, December 31, 1953	12,000	
	—	
Cost of goods sold		43,500
Gross profit on sales		\$21,500
Operating expenses:		
Selling expenses:		
Sales salaries	\$4,970	
Delivery expense	3,100	
Total selling expenses		\$ 8,070
General expenses:		
Administrative and office salaries	\$5,590	
Loss from bad debts	400	
Other general expense	3,940	
	— — —	
Total general expenses		9,930
Total operating expenses		18,000
Net profit from operations		3,500
Other income and expenses:		
Other income:		
Interest income	\$ 430	
Rental income	1,080	
	— —	
Total other income		\$ 1,510
Other expenses:		
Interest expense	\$1,650	
Sales discounts	1,400	
	— —	
Total other expenses		3,050
Deduct excess of other expenses over other income		1,540
Net income		\$ 1,960

Working papers from which a corrected balance sheet as of December 31, 1953, may be prepared are shown below:

**MONARCH WHOLESALE CO.**  
**WORKING PAPERS FOR CORRECTED BALANCE SHEET**  
**DECEMBER 31, 1953**

ACCOUNT	BALANCES BEFORE CORRECTION		CORRECTIONS		CORRECTED BALANCES	
	DR.	CR.	DR.	CR.	DR.	CR.
Cash	14,230				14,230	
Notes Receivable	15,000				15,000	
Accounts Receivable	24,000				24,000	
Allowance for Bad Debts				(10a) 120 (10b) 250		370
Merchandise Inventory, Dec. 31	12,000				12,000	
Unexpired Insurance	60				60	
Delivery Equipment	8,000				8,000	
Allowance for Depreciation of Delivery Equipment		3,500		(8a) 100 (8b) 100		3,700
Notes Payable		6,500				6,500
Accounts Payable		9,500				9,500
Accrued Interest on Notes Payable		50				50
Unearned Rental Income		240	(9) 80			160
Capital Stock		40,000				40,000
Paid-In Surplus		10,000				10,000
Earned Surplus		3,500	(6b) 125 (7b) 210 (8a) 100 (8b) 100 (10a) 120 (10b) 250	(9) 80		2,675
Unearned Interest Income				(6b) 125 (7b) 210		125 210
Accrued Salaries						
	73,290	73,290	615	615	73,290	73,290

The corrected balance sheet prepared from the working papers appears on the opposite page.

### QUESTIONS

1. Name three errors that are counterbalanced in a succeeding period and that do not require corrections if discovered after such time.
2. Name three errors that will not be counterbalanced in a subsequent period and that require corrections upon their discovery.

## MONARCH WHOLESALE CO.

## CORRECTED BALANCE SHEET

DECEMBER 31, 1953

ASSETS			
Current assets:			
Cash		\$14,230	
Notes receivable		15,000	
Accounts receivable	\$24,000		
Less: Allowance for bad debts	370	23,630	
Merchandise inventory		12,000	
Unexpired insurance		60	\$64,920
Fixed assets:			
Delivery equipment		\$ 8,000	
Less: Allowance for depreciation		3,700	4,300
Total assets			\$69,220
LIABILITIES			
Current liabilities:			
Notes payable		\$ 6,500	
Accounts payable		9,500	
Accrued interest on notes payable		50	
Accrued salaries		210	\$16,260
Deferred credits:			
Unearned rental income		\$ 160	
Unearned interest income		125	285
Total liabilities			\$16,545
CAPITAL			
Capital stock		\$40,000	
Paid-in surplus		10,000	
Earned surplus		2,675	
Total capital			52,675
Total liabilities and capital			\$69,220

3. Name three errors that result in misstatements on the income statement but that do not affect the balance sheet at the end of the current period.

4. Name three errors that result in misstatements on the balance sheet but that do not affect the income statement at the end of the current period.

5. (a) What two methods of recording corrections in profits of prior periods may be employed? (b) Which method do you prefer? Why?

6. The controller for the Wellman Co. states: "The understatement of an expense in one year calls for an overstatement of the same expense in the following year even when the error is discovered; if this is not done, expense will by-pass the income statement." Comment on this opinion.

7. State the effect upon profits in 1952 and 1953 of each of the following errors that are made at the end of 1952:

- (a) Accrued salaries are understated.
- (b) Accrued interest on notes receivable is understated.
- (c) Prepaid interest on notes payable is understated.
- (d) Deferred rental income is understated.
- (e) Depreciation on a plant and equipment item is overlooked.

8. State the effect of each of the following errors made at the end of 1952 upon the balance sheets and the income statements prepared for 1952 and 1953:

- (a) The ending inventory is understated as a result of an error in the count of goods on hand.
- (b) The ending inventory is overstated as a result of the inclusion of goods acquired and held on a consignment basis.
- (c) A purchase of merchandise at the end of 1952 is not recorded as such until payment is made for the goods in 1953; the goods purchased were included in the inventory at the end of 1952.
- (d) A sale of merchandise at the end of 1952 is not recorded as such until cash is received for the goods in 1953; the goods sold were excluded from the inventory at the end of 1952.
- (e) Goods shipped to consignees in 1952 were reported as sales; goods in the hands of consignees at the end of 1952 were ignored for inventory purposes; sale of such goods in 1953 and collections on such sales were recorded as credits to the receivables established with consignees in 1952.

## EXERCISES

1. In reviewing the books and records of the Kane Co. at the beginning of 1954, it is found that the adjustments for accrued and deferred interest as stated below were ignored in preparing statements in 1951, 1952, and 1953. (a) Give the entries to correct the accounts in 1954. (b) Assuming that the omissions were discovered before the books were closed at the end of 1953 what correcting entries and adjustments for year-end balances are required?

	END OF 1951	END OF 1952	END OF 1953
(1) Accrued interest expense	\$350	\$600	\$750
(2) Prepaid interest expense	110	130	125
(3) Accrued interest income	600	750	800
(4) Unearned interest income	15	45	40

2. The following errors were discovered in auditing the records for the Baylor Co. at the beginning of 1954 after the accounts were closed. What correcting entries are required?

- (a) A sale for \$250 had been recorded at the end of 1953; goods, cost \$185, were set aside for shipment but were erroneously included in the ending inventory.
- (b) Goods of \$4,000 shipped to consignees were included in the ending inventory; however goods, cost \$1,500, had been sold by consignees

on December 31, but the company did not record the sales until January 15 when remittances of \$1,850 were received from consignees relating to 1953 sales.

- (c) A purchase of \$350 was recorded in 1953, but the goods were not included in the ending inventory since they were not delivered by the transportation agency until January 2.
- (d) Errors in extensions on inventory sheets were found that resulted in 1953 inventory overstatements of \$650 and understatements of \$310.

3. State the effect, if any, that each of the following errors of 1953 has on the statements prepared on December 31, 1953. Indicate the sections of the statements that are affected.

- (a) The adjustment for interest accrued on notes receivable was omitted.
- (b) The adjustment for interest collected but not earned was omitted. Income was originally credited for collections.
- (c) No adjustment was made for rental income that was earned during 1953. Unearned Rental Income was originally credited for collections.
- (d) Depreciation of office furniture was omitted.
- (e) Merchandise received and on hand on December 31, 1953, was not included in the inventory figure, and no entry was made for the purchase until January 3, 1954.
- (f) In December, 1953, an entry was made for a purchase of merchandise; the merchandise had not been received and was not included in the inventory of December 31, 1953, although the company had title to the goods.
- (g) No adjustment was made for interest expense that should have been deferred.

4. Give the correcting entry that should be made in 1954 when each of the following errors is discovered (assume corrections in past profits are recorded directly in Earned Surplus):

- (a) On December 20, 1953, \$15 was deducted as interest on a note receivable for the period December 20 to January 19. Interest Income was credited. No adjustment was made on December 31.
- (b) No adjustment was made on December 31, 1953, for the interest on a 60-day, 6%, \$2,400 note receivable that is due on January 12.
- (c) Accrued sales salaries of \$300 were overlooked in adjusting the accounts at the end of 1953.
- (d) During December, 1953, merchandise of \$500 was received; this merchandise was included in the inventory, but no entry was made for the purchase until the invoice was received in January. At that time Purchases was debited.
- (e) Prepaid Insurance was debited for \$360, representing the premium for three years from October 1, 1953. No adjustment was made on December 31, 1953.

5. An auditor in examining a company's books and records on December 31, 1953, before the accounts are closed, discovers the following errors. What correcting entries are required?

- (a) Office Equipment, cost \$5,000, acquired on July 1, 1950, depreciated on a 5-year basis, was destroyed by fire on May 1, 1953. Cash was

debited and Office Equipment was credited for \$2,000, the proceeds from an insurance policy.

- (b) Safety guards were installed on plant machinery at a cost of \$2,000 at the beginning of July, 1952. Manufacturing Expense was charged for the betterment. The machinery had been acquired originally on July 1, 1950, and was being depreciated on a 10-year basis.

6. In auditing the accounts of Dudley and Bearman, Inc., on December 31, 1953, before accounts have been closed for the annual fiscal period, you find the following account:

MACHINERY			
1951		1953	
Jan. 2	Machine 1	Apr. 1	Proceeds from sale
	12,000		of Machine #2
July 1	Machine 2		4,600
	8,000		

You find that, while each machine had an estimated life of 10 years, no depreciation has ever been recorded. Machine #2 was sold when it was found that the volume of production did not warrant its continued use. Give the correcting and adjusting entries required on December 31, 1953.

7. A condensed income statement for the Palmer Corporation for 1953 shows the following:

Net sales	\$120,000
Cost of goods sold	85,000
Gross profit.	\$ 35,000
Expenses	37,500
Net loss.	\$ 2,500

An investigation of the records made in 1954 discloses the following errors in summarizing transactions for 1953:

- (a) The ending inventory was overstated \$2,600.
- (b) Purchases of \$6,000 made at the end of the year were not recorded although the goods were received and were included in the physical inventory.
- (c) Miscellaneous maintenance and repair items totaling \$700 were recorded as additions to machinery in 1953, and depreciation at 5% was recognized as depreciation on such additions.
- (d) Accrued expenses of \$750 were ignored.

Prepare a corrected income statement for 1953 and entries to correct the accounts in 1954.

8. The Jarvis Co. reports net incomes for a three-year period as follows:

1951	\$16,500
1952	7,500
1953	12,000

In reviewing the accounts in 1954 after the books have been closed, you find that the following errors have been made in summarizing activities:

	1951	1952	1953
Overstatement of inventories as a result of errors in count	\$1,500	\$4,000	\$1,800
Understatement of accrued expenses	250	600	350
Overstatement of accrued income	100		150
Understatement of depreciation on property items still in use	600	600	750

(a) Prepare working papers summarizing corrections and reporting corrected net incomes for 1951, 1952, and 1953. (b) Give the entry to bring the books of the company up to date in 1954.

9. The Bayshore Corporation has recognized losses on accounts receivable in the periods in which accounts were determined to be bad, as follows:

	IN 1951	IN 1952	IN 1953
1949 Accounts	\$150	\$ 50	-
1950 Accounts	300	700	\$ 250
1951 Accounts	—	450	1,200
1952 Accounts		-	200

In addition to the losses recognized to date, it is estimated that additional losses will be incurred as follows:

On 1952 accounts	\$ 100
On 1953 accounts	1,250

Reported profits for the Bayshore Co. were as follows:

1951	\$17,600
1952	20,000
1953	24,200

- (a) Calculate corrected profit figures for 1951, 1952, and 1953.  
 (b) What entry is required in 1954 in correcting the profits of prior periods?

## PROBLEMS

25-1. Before the accounts of the Madsen Supply Co. are adjusted and closed for the annual fiscal period ended December 31, 1953, an examination of the company records by the auditor discloses the following facts. Give any correcting and adjusting entries called for by the information given. (Assume that corrections in profits of past years are recorded directly in Earned Surplus.)

- (a) Accrued sales commissions had been overlooked in adjusting the accounts at the end of 1951 and 1952. Accrued amounts were: 1951, \$350; 1952, \$450. Accrued commissions at the end of 1953 are \$570.  
 (b) Checks totaling \$300 issued to former employees in 1951 are still outstanding. Present whereabouts of such employees are unknown, and it is doubtful whether the checks will ever be presented for payment.  
 (c) Raw materials, cost \$600, received on December 31, 1952, had been included in the physical inventory taken on that date; however, the

purchase was recorded when the invoice was received on January 4, 1953.

- (d) Ten-year, 5% bonds of \$1,000,000 were issued on January 1, 1950, bonds of \$100,000 to be redeemed annually. Interest is payable annually on January 1. The bonds were sold at 89. One tenth of the discount had been amortized at the end of 1950, 1951, and 1952.
- (e) In March, 1952, the company had received a 25% common stock dividend on 100 shares of Wilshire Farms common acquired in 1951 at 54. The shares received as a stock dividend had been sold for cash in April, 1952, at 60 and an income account had been credited for the full proceeds.
- (f) Store Equipment, cost \$70,000, book value \$30,000, had been traded for new equipment priced at \$100,000 on January 2, 1952. An allowance of \$20,000 was received on equipment traded in; in recording the transaction, the entry was made in accordance with income tax requirements, the asset account showing the basis for tax purposes. Depreciation on a 10-year estimated life had also been recorded on the tax basis. It is decided to correct accounts so that the asset is reflected at a cost of \$100,000 with depreciation on this basis.

**25-2.** An auditor is engaged by the R. V. Yates Co. in March, 1954, to examine their books and records and to make whatever corrections are necessary. The surplus account on the date of the audit is as follows:

EARNED SURPLUS			
Jan. 10, 1952 Dividends Paid	6,000	Jan. 1, 1951 Balance	26,400
Dec. 31, 1952 Net Loss for Year	3,600	Dec. 31, 1951 Net Income	
Jan. 10, 1953 Dividends Paid	6,000	for Year	7,050
Dec. 31, 1953 Net Loss for Year	8,000	Mar. 6, 1952 Premium on	
		Sale of Capital Stock	14,750

An examination of the accounts discloses the following:

- (1) Dividends had been declared on December 15 in 1951 and 1952 but had not been entered in the books until paid.
- (2) Betterments in plant and equipment of \$3,600 had been charged to expense at the end of April, 1950. Such improvements are estimated to have an 8-year life.
- (3) The physical inventory of merchandise taken at the end of 1951 had been overstated by \$1,200.
- (4) The merchandise inventories at the end of 1952 and 1953 did not include merchandise that was then in transit and to which the company had title. These shipments of \$1,600 and \$3,000 respectively were recorded as purchases in January of 1953 and 1954 respectively.
- (5) The company had failed to record accrued sales commissions of \$600 and \$850 at the end of 1952 and 1953 respectively.

**Instructions:** (1) Prepare working papers for the correction of account balances similar to those illustrated on pages 771 and 773, using the following columns:

EXPLANATION	SURPLUS JAN. 1, 1951		PROFIT AND LOSS YR. ENDED DEC. 31, 1951		PROFIT AND LOSS YR. ENDED DEC. 31, 1952		PROFIT AND LOSS YR. ENDED DEC. 31, 1953		ACCOUNTS REQUIRING CORRECTION IN 1954		
	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	ACCOUNT

(2) Journalize corrections required in March, 1954, in compound form.

(3) Prepare a statement of earned surplus covering the 3-year period beginning January 1, 1951. This statement should report the corrected surplus balance on January 1, 1951, the annual changes in the account, and the corrected earned surplus balances as of December 31, 1951, 1952, and 1953.

(4) Set up an account for earned surplus before correction, and post correcting data to this account from part (2) above. Balance the account, showing the corrected earned surplus as of December 31, 1953.

**25-3.** The earned surplus account for the Nielsen Company at the end of 1953 appears below:

#### EARNED SURPLUS

Dec. 31, 1952 Net loss for year	1,200	December 31, 1951 Balance	14,200
Dec. 31, 1953 Net loss for year	3,200		

An audit of the books of the company in February, 1954, disclosed the following errors in recording activities for 1951, 1952, and 1953:

- (1) No adjustment was made on December 31, 1952, for accrued wages of \$500.
- (2) On December 10, 1952, a 60-day, \$12,000, non-interest-bearing note was received from a customer and the customer was given credit for \$12,000 less 6% discount for the 60 days. The discount was entered in a nominal account. No adjustment was made on December 31, 1952.
- (3) At the end of 1952 an adjustment for \$300 representing depreciation on a delivery truck was omitted. (The correct depreciation for 1953 was recorded on December 31, 1953.)
- (4) Because of errors in counting, the physical inventory of merchandise taken on December 31, 1951, was overstated by \$600; the inventory taken on December 31, 1952, was understated by \$1,000.
- (5) In March, 1953, a \$700 balance of 1952 accounts receivable was written off to Loss from Bad Debts. The loss should have been identified with operations of 1952.
- (6) Merchandise of \$600 was received on December 31, 1952, and was included in the physical inventory taken on that date. The purchase was not recorded until the invoice was received January 6, 1953.
- (7) On May 1, 1952, \$360 was charged to Unexpired Insurance for a 3-year fire insurance policy on a building. No adjustments for the premium were made at the end of 1952 and 1953.
- (8) On December 20, 1952, the company borrowed \$2,400 on a non-interest-bearing note payable. The bank deducted 6% for 60 days,

the company charging Interest Expense for the discount. No adjustment was made on December 31, 1952

- (9) No adjustment was made on December 31, 1953, for accrued interest on a \$1,200, 6%, 60-day note receivable that was dated December 17, 1953.
- (10) The Unearned Rental Income account was credited on December 1, 1953, for \$300 representing rent received for a 3-month period from that date. No adjustment was made on December 31, 1953.
- (11) The company gave a \$900, 6%, 60-day note payable to the First State Bank on December 8, 1953. No adjustment for accrued interest was made on December 31, 1953.
- (12) Merchandise ordered at a cost of \$100 during December, 1953, was received on December 31, 1953, but was not included in the inventory. The purchase was recorded when payment for the purchase was made on January 5, 1954.

*Instructions:* (1) Prepare working papers for the correction of account balances similar to those illustrated on pages 771 and 773, with the following columns:

EXPLANATION	SURPLUS DEC. 31, 1951		PROFIT AND LOSS YR. ENDED DEC. 31, 1952		PROFIT AND LOSS YR. ENDED DEC. 31, 1953		ACCOUNTS REQUIRING CORRECTION IN 1954		
	DR.	CR.	DR.	CR.	DR.	CR.	DR.	CR.	ACCOUNT
— —	—	—	—	—	—	—	—	—	—

(2) Prepare a compound journal entry to correct the accounts in February, 1954.

(3) Prepare an earned surplus account as it would have appeared if no errors had been made to prove the correction to Earned Surplus in part (2) above.

**25-4.** The statements at the top of the opposite page were prepared for the Paulsen Company at the end of 1953.

During February, 1954, the following information is disclosed in connection with an audit of the books of the company:

- (1) Store equipment that cost \$3,000 and that had an estimated life of 6 years when purchased on January 2, 1951, is estimated at this time to have a life of 10 years.
- (2) The merchandise inventory as of December 31, 1953, was overstated by \$720.
- (3) Merchandise in transit amounting to \$1,320 was not included in the inventory of December 31, 1953, but the invoice had been entered in the purchases journal in 1953.
- (4) A loss of \$2,000 resulting from fire, the loss not being covered by insurance, was charged to General Expenses in 1953.
- (5) On January 3, 1953, store equipment costing \$5,000, with an allowance for depreciation of \$4,000, was sold for \$600. Cash was debited and Store Equipment was credited for this amount.

INCOME STATEMENT FOR YEAR ENDED DEC. 31, 1953				BALANCE SHEET DECEMBER 31, 1953			
Sales		87,000		Assets:			
Cost of Goods Sold:				Cash		14,200	
Mdse. Inv., Jan. 1	24,000			Accounts Receivable	14,000		
Purchases	48,000			Less All. for Bad Debts	560	13,440	
Mdse. Available for Sale	72,000			Mdse. Inventory		23,000	
Mdse. Inv., Dec. 31	23,000	49,000		Delivery Equipment		800	
				Store Equipment	12,000		
Gross Profit on Sales		38,000		Less All. for Depr.	7,000	5,000	
Operating Expenses:				Building	40,000		
Selling Expenses	16,000			Less All. for Depr.	20,000	20,000	
General Expenses	10,000						
				Land		20,000	
Total Operating Expenses		26,000		Total Assets		96,440	
Net Profit from Operations		12,000					
Other Income:				Liabilities:			
Purchases Discount	900			Accounts Payable		13,600	
Rental Income	3,000	3,900					
				Capital:			
		15,900		Capital Stock	50,000		
Other Expense:				Earned Surplus	32,840		
Sales Discount		1,400					
Net Income		14,500		Total Capital		82,840	
				Total Liabilities and Capital		96,440	

(6) A truck was purchased on a conditional sales contract on December 30, 1953. The total purchase price was \$2,500, but the purchase was recorded by a debit to Delivery Equipment and a credit to Cash for \$800, the amount of the down payment.

(7) A check for \$64 received from Joseph Voss on account had been deposited and then returned in December, 1953, by the bank. No entry was made when the bank returned the check. The cash was collected from Voss on January 20, 1954.

(8) A part of the building was leased to the Timmer Corporation for \$3,000 for 12 months ending April 30, 1954. The cash received was reported as income for 1953.

*Instructions:* (1) Prepare working papers for the correction of account balances in 1954 similar to those illustrated on pages 771 and 773, with the following columns:

EXPLANATION	SURPLUS DECEMBER 31, 1952		PROFIT AND LOSS YEAR ENDED DECEMBER 31,		ACCOUNTS REQUIRING CORRECTION IN 1954		
	DR.	CR.	DR.	CR.	DR.	CR.	ACCOUNT

(2) Prepare a compound entry to correct the accounts in February, 1954.

(3) Prepare working papers for a corrected income statement and for a corrected balance sheet for 1953.

(4) Prepare a corrected income statement and a balance sheet.

**25-5.** The statements that follow were prepared for Glick, Inc. at the end of 1953:

INCOME STATEMENT FOR YEAR ENDED DEC. 31, 1953		BALANCE SHEET DECEMBER 31, 1953	
Sales	204,000	Assets:	
Cost of Goods Sold:		Cash	13,000
Mdse. Inv., Jan. 1	66,000	Petty Cash	200
Purchases	<u>140,000</u>	Accounts Receivable	32,000
Mdse. Available for Sale	206,000	Mdse. Inventory	70,000
Less Mdse. Inv., Dec. 31	<u>70,000</u>	Investment in Bonds	<u>50,000</u>
	<u>136,000</u>	Total Assets	<u>185,200</u>
Gross Profit on Sales	68,000	Liabilities:	
Operating Expenses:		Accounts Payable	4,800
Selling Expense	27,000	Bonds Payable	<u>96,000</u>
General Expense	<u>32,000</u>	Total Liabilities	100,800
Total Operating Expenses	<u>59,000</u>	Capital:	
Net Profit from Operations	9,000	Capital Stock	50,000
Other Income:		Earned Surplus	<u>34,400</u>
Purchases Discount	<u>1,500</u>	Total Capital	<u>84,400</u>
	10,500	Total Liabilities and Capital	<u>185,200</u>
Other Expense:			
Sales Discount	<u>3,000</u>		
Net Income	<u>7,500</u>		

During January, 1954, the following facts were discovered:

- On January 2, 1953, a 3-year fire insurance policy was purchased for \$480 and charged to General Expense. No adjustment was made at the end of 1953 for the unexpired insurance.
- Ten-year, 5% bonds of \$100,000 par were issued at 96 on June 30, 1953. The bonds payable account was credited for the amount of cash received. The interest is payable annually on June 30. No adjustments were made at the end of 1953.
- A 25% stock dividend, payable on February 1, 1954, was declared on December 15, 1953. No entry had been made.
- The petty cash fund, kept under the imprest system, had not been replenished at the end of the fiscal period. Payments had been made out of the fund as follows: \$70 for General Expense and \$60 for Selling Expense.
- 5% bonds, face value \$50,000, had been purchased at face value on January 2, 1953. Interest is collected semiannually on January 1 and July 1. No adjustment for accrued interest was made at the end of 1953.
- Accrued expenses of \$55 for utilities had not been included in the adjustments at the end of 1953.
- The board of directors had authorized a reserve of \$10,000 for possible loss on a damage suit at the end of 1953. No entry had been made.
- Accounts receivable have been written off when discovered to be uncollectible, as follows:

	IN 1952	IN 1953
1951 accounts .	\$350	\$150
1952 accounts .	250	300
1953 accounts .		100

In addition to the losses recognized to date, it is estimated that additional losses will be incurred as follows: on 1952 accounts, \$100; on 1953 accounts, \$500.

*Instructions:* (1) Prepare working papers for the correction of account balances in 1954 similar to those illustrated on pages 771 and 773, with the following columns:

EXPLANATION	SURPLUS DECEMBER 31, 1953		ACCOUNTS REQUIRING CORRECTION IN 1954		
	DR.	CR.	DR.	CR.	ACCOUNT

(2) Prepare a compound entry to correct the accounts in January, 1954.

(3) Prepare working papers for corrected statements and prepare a corrected income statement and a corrected balance sheet for 1953.

**25-6.** The Norris-Brown Mfg. Co. was organized January 2, 1951. Before the accounts of the company are adjusted and closed at the end of the annual fiscal period, December 31, 1953, an auditor is engaged for the first time to inspect the books and records of the corporation and to prepare the necessary correcting, adjusting, and closing entries and the accounting statements. Examination of the books and records by the auditor discloses the following:

(a) The cash balance includes: (1) A check for \$296 signed by Fred Hyde and returned to the company by the bank marked "Not Sufficient Funds." (2) I.O.U.'s for \$585 representing advances to employees. (3) \$10,000 that is on deposit in the bank as a fund to provide for the retirement of bonds on their maturity.

(b) The notes receivable balance includes: (1) Notes past due of \$6,000 (all of the notes were obtained by the corporation in 1950), of which notes of \$2,000 are known to be uncollectible. No allowance for doubtful notes had been provided. It is decided that an allowance of \$500 should be set up for possible losses on the remaining overdue notes. (2) Notes from officers of the corporation, \$15,000.

(c) The accounts receivable balance includes accounts of \$2,800 that are known to be uncollectible. The allowance for doubtful accounts is to be increased by 1% of net sales. Net sales during 1953 were \$415,000.

(d) The auditor is given the following physical inventory figures for use in making inventory adjustments:

Finished Goods	. . . . .	\$27,000
Raw Materials	. . . . .	14,300
Goods in Process	. . . . .	18,300

However, it is found that the finished goods figure includes: (1) merchandise costing \$2,000 that has been set aside for shipment, the entry for the sale already having been made; (2) merchandise that has been returned by a customer included in the inventory at the selling price, \$3,000. The company sells merchandise at a gross profit of 25% of the sales price.

It is also found that the raw materials figure reports raw materials at market price, which is 10% above the cost to the company.

Raw materials included in the goods in process balance are estimated at \$8,250, which is also 10% above cost.

(e) The machinery and equipment account has a balance of \$60,000 that includes: (1) the cost of additional machinery purchased at the end of July, 1953, \$6,000; (2) the cost of repairs to machinery during 1953, \$500, which was improperly capitalized. Machinery and equipment is depreciated at 5% per year.

(f) The store furniture and fixtures account has a balance of \$15,000 that includes a purchase of furniture at the end of March, 1952, \$400, upon which no depreciation has been recorded. Store furniture and fixtures is depreciated on an estimated 5-year life.

(g) Delivery equipment is shown at a cost of \$10,000. Equipment costing \$8,000 was purchased on January 2, 1951, and the remainder was purchased January 2, 1952. The equipment has been depreciated on a 5-year life with an estimated scrap value of 10% of cost. It is now believed, however, that all of the equipment will have to be replaced at the end of 1954; the scrap value at that time is estimated to be 15% of cost for equipment purchased in 1951 and 25% of cost for equipment purchased in 1952.

(h) The shipping equipment account is shown at a cost of \$5,000 on January 2, 1953, representing equipment purchased January 2, 1951. No additional purchases have been made. On December 1, 1953, equipment costing \$600 was destroyed by fire. It is estimated that insurance of \$400 may be recovered on this loss. No entries have been made with regard to the loss and probable recovery. The depreciation rate on the shipping equipment is 10%.

(i) Deferred items are to be reduced as follows: (1) Prepaid Insurance by \$1,750, the amount of insurance expired; (2) Office Supplies by \$370, the cost of office supplies consumed.

(j) Deferred interest on notes payable is \$180. The company has failed to record deferred interest on notes payable at the end of the past two years as follows: 1951, \$150; 1952, \$300.

(k) Accrued interest on notes receivable is \$410. The company has failed to record accrued interest at the end of the past two years as follows: 1951, \$350; 1952, \$340.

(l) Ten-year, 5% bonds of \$100,000 were issued at 90 on July 1, 1952. The company has failed to amortize any of the discount.

(m) Accrued office salaries are \$450. The company has failed to record accrued office salaries at the end of the past two years as follows: 1951, \$350; 1952, \$540.

(n) Accrued interest on notes payable at the end of 1953 is \$200.

(o) It is determined that the company failed to record unearned interest on notes receivable of \$150 at the end of 1952.

*Instructions:* Prepare the correcting and adjusting entries required at the end of 1953 as a result of the foregoing data. (Assume that corrections in profits of prior periods are recorded directly in Earned Surplus. No closing entries or accounting statements are required.)

25-7. After the various nominal accounts are closed into the profit and loss summary account for the year ended December 31, 1953, but *before* the profit and loss summary account is closed into earned surplus, the books of Clay, Incorporated show a profit of \$200,000. In arriving at this profit, the company's bookkeeper took into account the actual cash receipts and disbursements during the year with regard to the following:

Interest received	.....	\$ 9,000
Interest paid	.....	1,250
Taxes paid	.....	12,000
Insurance paid	.....	7,000
Cash discounts allowed customers	.....	12,500

The accruals that were not taken into consideration at the end of the previous year and the accruals at the end of the current year are as follows:

		DECEMBER 31	
		1952	1953
Interest receivable accrued	.....	\$2,500	\$3,000
Interest payable accrued	...	200	180
Taxes prepaid	..	2,500	3,000
Insurance prepaid		3,250	2,000
Res. for cash discount on Accts. Rec.	.	3,750	2,500
Depreciation omitted	..	1,500	2,000
		overstated	understated
Inventory at close		\$2,000	\$ 500

*Instructions:* Prepare the journal entries, with explanations, that will serve to correct the profit and loss account for 1953 and to bring into the balance sheet the proper accounts and amounts as of December 31, 1953. (A.I.A. adapted)

25-8. The surplus account of the Walker Manufacturing Company appears as follows:

SURPLUS			
Dividends, 1951	40,000 00	Balance, Dec. 31, 1950	235,000 00
Dividends, 1952	35,000 00	Profits, 1951	65,000 00
Dividends, 1953	20,000 00	Profits, 1952	78,300 00
Balance, Dec. 31, 1953	331,300 00	Profits, 1953	48,000 00
	426,300 00		426,300 00

The company has not provided for accruals and deferred items in closing its books and has ignored the following items at the various dates of closing:

	DEFERRED CHARGES	DEFERRED INCOME	ACCRUED EXPENSES	ACCRUED INCOME
December 31, 1950	\$2,125.00	.....	\$5,200.00	\$475.00
December 31, 1951	2,640.00	.....	3,135.00	.....
December 31, 1952	3,100.00	\$1,250.00	6,120.00	290.00
December 31, 1953	1,950.00	700.00	4,200.00	.....

In closing the books the inventory was priced at cost or market, whichever was lower, and, in addition, reserves for possible future declines in market value were set up as follows:

At December 31, 1951.....	\$ 8,000.00
At December 31, 1952.....	12,600.00
At December 31, 1953.....	9,250.00

Each reserve was set up by a charge to Profit and Loss and remained on the books until the next closing, when it was credited to the account with the opening inventory. The reserve set up at the end of 1953 is still on the books.

Consigned goods have been included in the inventories at billed price. The company has billed all goods sent to consignees at 130% of the cost. The following consigned goods inventories have been included:

At December 31, 1951.....	\$15,600.00
At December 31, 1952.....	10,400.00
At December 31, 1953.....	18,200.00

*Instructions:* Prepare a corrected statement of surplus from December 31, 1950, to December 31, 1953. (A.I.A. adapted)

**25-9.** The Mills Company has paid no dividends in recent years. The books show a surplus at December 31, 1953, of \$421,000 made up as follows:

Balance at December 31, 1951.....	\$189,000
Profit, 1952.....	92,000
Profit, 1953.....	140,000
	<u>\$421,000</u>

The following matters call for consideration at the close of the respective years:

DECEMBER 31, 1951:

- (1) Bad debts amount to \$12,000 and are to be written off Accounts Receivable.
- (2) Consigned goods (own) are included in the inventory at \$120,000 and are priced at 20% in excess of cost.
- (3) The following liabilities are omitted from the books:
 

New construction.....	\$25,000
Material included in inventory.....	3,000
Wages.....	2,400
Accrued taxes.....	1,700

**DECEMBER 31, 1952:**

- (4) Bad debts amount to \$9,000 and are to be written off Accounts Receivable.
- (5) Consigned goods (own) amount to \$180,000, which is 20% in excess of cost.
- (6) Liabilities omitted from the books are:
 

Goods on hand (also omitted from inventory)	\$ 8,000
Accrued taxes	2,100
- (7) Plant additions, amounting to \$9,000, have been erroneously charged to Profit and Loss.
- (8) The inventory is found to be overstated by \$14,300 because of an error in recapitulation.
- (9) No provision for depreciation was made on the books; your calculations show that \$5,000 should be provided.

**DECEMBER 31, 1953:**

- (10) Bad debts amounting to \$11,000 are to be written off Accounts Receivable.
- (11) Consigned goods (own) amount to \$156,000, being valued at 30% in excess of cost.
- (12) Liabilities omitted from the books are:
 

For purchases of new machinery	\$12,000
Accrued wages	3,200
Accrued taxes	2,700
- (13) No provision was made in the books for depreciation; your calculations show that \$7,000 should be provided.
- (14) The profits for the year include a credit of \$8,000 in settlement of a lawsuit arising from transactions of the year 1950.

*Instructions:* Prepare a reconciliation of the surplus at December 31, 1951, and of the profits in 1952 and 1953, as shown by the books, with the adjusted figures as shown by the audited statement. (A.I.A. adapted)

**25-10.** The trial balance of the Albers Company on December 31, 1953, is given at the top of the following page.

An examination of the company books discloses the following facts:

- (1) Checks totaling \$10,000 in settlement of accounts payable were dated and issued in December, 1953, but were not entered in the cashbook until January, 1954.
- (2) Accounts Receivable includes an amount of \$400,000 representing capital advances to subsidiary companies. The balance is receivable from customers.
- (3) It is estimated that 10% of the customers' accounts receivable and 10% of the notes receivable are doubtful of collection. All accounts and notes were considered collectible at the beginning of the year.
- (4) The inventory at January 1, 1953, includes the following:
 

Machinery and equipment	\$200,000
Less — Allowance for depreciation	100,000
	\$100,000

- (5) The inventory at December 31, 1953 (excluding Machinery and Equipment and its related allowance), is as follows:
 

Inventory on hand	\$500,000
Inventory in transit for which the liability has not been recorded	10,000
	\$510,000

## ALBERS COMPANY

## TRIAL BALANCE

DECEMBER 31, 1953

Cash in banks	\$ 180,000	
Petty cash funds	5,000	
Customers' notes receivable	80,000	
Accounts receivable	900,000	
Current advances to subsidiary companies	25,000	
Investment in subsidiary companies	500,000	
Land	5,000	
Buildings	20,000	
Machinery and equipment	50,000	
Furniture and fixtures	40,000	
Allowance for depreciation, Jan 1, 1953		\$ 35,000
Life insurance	200,000	
Inventory at Jan 1, 1953	500,000	
Trade creditors		220,000
Common stock (\$100 par) authorized and issued		500,000
Surplus at Jan. 1, 1953		960,000
Net sales		5,800,000
Purchases	3,500,000	
Manufacturing expenses	400,000	
Selling, administrative, and general expense	1,150,000	
Other income		40,000
	<u>\$7,555,000</u>	<u>\$7,555,000</u>

(6) The balance of the life insurance account represents the accumulated premiums that were charged to this account. The premiums paid to December 31, 1952, amounted to \$160,000, and the premiums paid in 1953 amounted to \$40,000. An examination of the policies shows that the cash surrender value at December 31, 1952, amounted to \$85,000, and the cash surrender value at December 31, 1953, amounted to \$100,000

(7) There has been no change in the various property accounts during 1953. Depreciation should be provided at the following rates:

Buildings	5% per year
Machinery and equipment	10% per year
General office furniture and fixtures	10% per year

(8) Insurance premiums, charged to General Expense:

Prepaid at December 31, 1952	.....	\$3,000
Prepaid at December 31, 1953	.....	2,000

(9) Taxes, charged to General Expense:

Prepaid at December 31, 1952	.....	\$5,000
Prepaid at December 31, 1953	.....	8,000

(10) Commissions, charged to selling expenses:

Accrued at December 31, 1952	.....	\$4,000
Accrued at December 31, 1953	.....	5,000

Inventories, fixed assets, and investments are shown throughout at cost. Income taxes are not to be considered.

*Instructions:* Prepare working papers showing the necessary adjustments and the segregation of balance sheet and profit and loss items. (A.I.A. adapted)

### *Statement Analysis* *Use of Comparative Data*

#### **STATEMENT ANALYSIS**

The financial statements give vital information concerning the position of the enterprise and the results of its operation. This information is important to the many groups that are interested in the business, including:

1. The owners — sole proprietor, partners, or stockholders.
2. The management.
3. The creditors.
4. Prospective owners and prospective creditors.
5. Government — local, state, and federal, including regulatory, taxing, and analysis units.
6. Employees of the business.
7. The general public.

Analysis of the data reported on the accounting statements is necessary in reaching conclusions regarding financial position and operations. The nature of the analysis will depend upon the type of questions that are raised. For example, inquiry concerning the current condition of a company may be answered by comparing current assets as reported on the balance sheet with current liabilities. Questions concerning growth of a company or the trend of dollar sales can be answered only by reference to income statements for a number of periods. Questions concerning the relationship of earnings to investment are answered by a comparison of profit and loss and capital data. The process of analysis involves the development of comparisons and the measurement of relationships. The results of analysis will form the bases for conclusions that are made and the policies that are adopted with respect to the business.

When the financial position and the progress of a business are being considered, three general factors are normally of primary interest: (1) its solvency, (2) its stability, and (3) its profitability.

To be solvent, a business must be able to meet its liabilities as they mature. Statements are analyzed to determine whether the business is and will continue to be solvent. Such analysis includes studies of the relationship of current assets to current liabilities, the security afforded the various groups through the soundness of asset values, the size and the nature of the various creditor and ownership equities, and the amounts and the trend of periodic earnings.

Stability is judged by (a) the company's ability currently to meet interest requirements on its debt and ultimately to repay principal amounts owed, and (b) the company's ability to pay dividends regularly to its stockholders. In judging stability, data concerning both operations and financial position require study. There must be a regular demand for the goods or services sold, and the margin on sales must be sufficient to provide for dividends after operating expenses and interest charges have been fully met. There should be a satisfactory turnover of current assets. Plant and equipment assets must be productively employed.

Profitability is measured by the company's success in maintaining and increasing the owners' equity as indicated by its income statements. The size, the regularity, and the trend of earnings are all significant in an appraisal of profitability.

While attention is normally directed to an evaluation of each of the foregoing factors, analysis must also serve the various groups that have certain special questions of individual interest. For example, management seeks guides to better control, to more satisfactory selling, purchasing, and financing policies, and to more efficient utilization of plant assets. Creditors are interested not only in a company's financial position as a "going concern," but also in its position should it be forced to liquidate and become a "quitting concern." Owners may be concerned with the question of expansion and whether this should be effected through the retention of earnings, through additional borrowing, or through increased investment by owners.

The various groups interested in the facts of business have looked to the accountant, not only for general purpose statements concerning financial position and the results of operations, but also for the special analyses of financial data that they might require for their own individual purposes. They have looked to the accountant as best qualified to develop analytical data in view of his full appreciation of the conventions and processes that are applied in the development of the financial statements that form the basis for analysis. It is not uncommon now for the accountant to submit, along with the regular accounting reports, comprehensive analyses of significant financial information that will assist individuals in reaching intelligent conclusions concerning the financial progress of the business.

#### **PRIMARY INSPECTION OF ACCOUNTING STATEMENTS**

Obviously, if analytical data are to be reliable, they must be developed from accounting reports that properly exhibit the facts of business. As a first step, reports to be used as a basis for analysis should

be carefully reviewed to determine whether they display any shortcomings or discrepancies. In the course of the examination, the following questions should be asked: Is there full disclosure of all relevant financial data? Have proper accounting standards and procedures been employed? Have appropriate and consistent bases for valuation been used? Are the statement data properly classified? Where necessary, statements should be corrected so that they report the full financial story in conformance with accepted accounting standards.

### **ANALYTICAL PROCEDURES**

Analytical procedures fall into two main categories: (1) comparisons and measurements based upon financial data for two or more periods, and (2) comparisons and measurements based upon the financial data of only the current fiscal period. The first category includes the preparation of comparative statements, the determination of ratios and trends for data on successive balance sheets and income statements, and special analyses of changes in balance sheet items and operating data. The second category includes the determination of current balance sheet and profit and loss relationships and special analyses of earnings and earning power. Normally an adequate review of financial data requires analyses based upon both current data and data covering a number of periods.

The analytical procedures that are commonly employed are illustrated in this and the next two chapters. While individual analyses will be presented in report and tabular forms, such data are frequently reported in graphic form for more effective presentation of significant financial relationships. It should be emphasized that the various analyses are simply guides to the evaluation of financial data. Sound conclusions with respect to the analytical data are reached only through the intelligent use and interpretation of the data.

### **COMPARATIVE STATEMENTS**

Financial data for the current year become more meaningful when compared with similar data for the previous year or a number of prior years. Statements prepared in a form that reflects financial data for two or more years are known as *comparative statements*. Accounting authorities have strongly encouraged the preparation of statements in comparative form. The Committee on Accounting Procedure of the American Institute in Bulletin No. 6 recommends that the use of comparative statements be extended. In taking this position, it comments:

... The practice enhances the significance of the reports, and brings out more clearly the nature and trends of current changes affecting

the enterprise. The use of statements in comparative form serves to increase the reader's grasp of the fact that the statements for a series of periods are far more significant than those for a single period—that statements for one year are but one instalment of what is essentially a continuous history.

. . . In any one year it is ordinarily desirable that the balance sheet, the income statement and the surplus statement (the two latter being separate or combined) be given for the preceding as well as for the current year. Footnotes, explanations and accountants' qualifications already made on the statements for the preceding year should be given, or at least referred to, in the comparative statements. If, because of reclassifications or for other reasons, changes have occurred in the basis for presenting corresponding items for the two periods, information should be furnished which will explain the change. This is in conformity with the well recognized rule that any change in practice which would affect comparability should be disclosed.<sup>1</sup>

In practice one finds companies in increasing number each year releasing statements prepared in comparative form.

#### **COMPARATIVE STATEMENTS—HORIZONTAL ANALYSIS**

Regardless of the financial strength of a business at a given point, a company must operate successfully if it hopes to continue as a going concern. The income statement measures the effects of operations. The progress of these operations may be viewed over a number of periods by preparing the income statement in comparative form. The comparative report may go beyond a simple listing of comparative values by offering analytical information in the form of the dollar changes and the percentage changes in profit and loss data for several periods under review. The absolute changes, together with the relative changes, are thus shown. The development of data summarizing changes taking place over a number of periods is known as *horizontal analysis*. A comparative income statement for the Marshall Company reporting both dollar and percentage changes for a three-year period is illustrated on the following page.

It would be possible to show the detail concerning cost of goods sold, expenses, other income, and other expense by expanding this statement or by providing this detail by means of separate comparative schedules. A comparative schedule reporting the cost of goods sold data, for example, is also illustrated on the next page.

The effect of operations on financial position and the progress of a business in terms of financial position can be presented by means of a comparative balance sheet. Here, too, both dollar changes and percentage changes may be presented to show the absolute as well as

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<sup>1</sup>Accounting Research Bulletin No. 6, "Comparative Statements," April, 1940 (New York: American Institute of Accountants), p. 49.

**MARSHALL COMPANY**  
**CONDENSED COMPARATIVE INCOME STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, AND 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1952-1953	
				AMOUNT	PER CENT	AMOUNT	PER CENT
Gross sales	1,000,000	1,750,000	1,500,000	750,000	75%	250,000*	14%
Sales returns	50,000	100,000	75,000	50,000	100%	25,000*	25%
Net sales	950,000	1,650,000	1,425,000	700,000	74%	225,000*	14%
Cost of goods sold	630,000	1,200,000	1,000,000	570,000	90%	200,000*	17%
Gross profit	320,000	450,000	425,000	130,000	41%	25,000*	6%
Selling expenses	240,000	300,000	280,000	60,000	25%	20,000*	7%
General expenses	100,000	110,000	100,000	10,000	10%	10,000*	9%
Total expenses	340,000	410,000	380,000	70,000	21%	30,000*	7%
Net profit or loss* from operations	20,000*	40,000	45,000	60,000	—	5,000	13%
Other income	50,000	65,000	75,000	15,000	30%	10,000	15%
	30,000	105,000	120,000	75,000	250%	15,000	14%
Other expense	10,000	20,000	20,000	10,000	100%	—	—
Net income before income tax	20,000	85,000	100,000	65,000	325%	15,000	18%
Income tax	5,000	25,000	30,000	20,000	400%	5,000	20%
Net income to earned surplus	15,000	60,000	70,000	45,000	300%	10,000	17%

**MARSHALL COMPANY**  
**COMPARATIVE SCHEDULE OF COST OF GOODS SOLD**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1952-1953	
				AMOUNT	PER CENT	AMOUNT	PER CENT
Merchandise inventory, Jan. 1	105,000	125,000	330,000	20,000	19%	205,000	164%
Purchases	650,000	1,405,000	895,000	755,000	116%	510,000*	36%
Goods available for sale	755,000	1,530,000	1,225,000	775,000	103%	305,000*	20%
Less: Merchandise inventory, Dec. 31	125,000	330,000	225,000	205,000	164%	105,000*	32%
Cost of goods sold	630,000	1,200,000	1,000,000	570,000	90%	200,000*	17%

the relative changes that have taken place over a period of years. Such a comparative balance sheet for the Marshall Company for the three-year period, 1951-1953 inclusive, is illustrated on the following page.

**MARSHALL COMPANY**  
**CONDENSED COMPARATIVE BALANCE SHEET**  
**DECEMBER 31, 1951, 1952, 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1952-1953	
				AMOUNT	PER CENT	AMOUNT	PER CENT
<b>ASSETS</b>							
Current assets	673,500	955,500	855,000	282,000	42 %	100,500*	11 %*
Long-term investments	250,000	400,000	500,000	150,000	60 %	100,000	25 %
Plant and equipment (net)	675,000	875,000	775,000	200,000	30 %	100,000*	11 %*
Intangibles	100,000	100,000	100,000				
Deferred charges	61,500	60,500	48,000	1,000*	2 %*	12,500*	21 %*
Total assets	1,760,000	2,391,000	2,278,000	631,000	36 %	113,000*	5 %*
<b>LIABILITIES</b>							
Current liabilities	130,000	546,000	410,000	416,000	320 %	136,000*	25 %*
Long-term debt	300,000	400,000	400,000	100,000	33 %		
Total liabilities	430,000	946,000	810,000	516,000	120 %	136,000*	14 %*
<b>CAPITAL</b>							
6 % Preferred stock	250,000	350,000	350,000	100,000	40 %		
Common stock	750,000	750,000	750,000		-		
Paid-in surplus	100,000	100,000	100,000		-		
Earned surplus	230,000	245,000	268,000	15,000	7 %	23,000	9 %
Total capital	1,330,000	1,445,000	1,468,000	115,000	9 %	23,000	2 %
Total liabilities and capital.	1,760,000	2,391,000	2,278,000	631,000	36 %	113,000*	5 %*

Here, too, it is possible to expand the statement to show asset, liability, and capital group detail, or the detail may be presented in the form of separate supporting schedules. A comparative schedule of current assets in support of the balance sheet summary and a comparative earned surplus statement are given on the opposite page.

Information concerning percentage changes on the comparative statements serves to point out certain relationships that require further investigation and possible action. For example, the comparative schedule of current assets shows an increase in notes receivable of \$30,000 at the end of 1952. The indication that this is a 300% increase serves to emphasize the significance of the change. Investigation may disclose that collections on account are slow and customers are postponing payments by the issuance of notes. The comparative income statement reports an increase in sales returns of \$50,000 for 1952. The significance of this amount is fully appreciated only when it is seen that this represents a 100% increase in sales returns as compared with only a 75% increase in sales for the period. An investigation of causes for the disproportionate increase appears warranted.

**MARSHALL COMPANY**  
**COMPARATIVE SCHEDULE OF CURRENT ASSETS**  
**DECEMBER 31, 1951, 1952, 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1952-1953	
				AMOUNT	PER CENT	AMOUNT	PER CENT
Cash	115,000	100,500	60,000	14,500*	13 %*	40,500*	40 %*
Marketable securities	100,000	150,000	150,000	50,000	50 %	—	—
Notes receivable	10,000	40,000	50,000	30,000	300 %	10,000	25 %
Accounts receivable	328,500	350,000	380,000	21,500	7 %	30,000	9 %
Total receivables	338,500	390,000	430,000	51,500	15 %	40,000	10 %
Less: Allowance for bad debts	5,000	15,000	10,000	10,000	200 %	5,000*	33 %*
Net receivables	333,500	375,000	420,000	41,500	12 %	45,000	12 %
Merchandise inventory	125,000	330,000	225,000	205,000	164 %	105,000*	32 %*
Total current assets	673,500	955,500	855,000	282,000	42 %	100,500*	11 %*

**MARSHALL COMPANY**  
**COMPARATIVE EARNED SURPLUS STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951 1952, 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1952-1953	
				AMOUNT	PER CENT	AMOUNT	PER CENT
Earned surplus at beginning of year	240,000	230,000	245,000	10,000*	4 %*	15,000	7 %
Net income from income statement	15,000	60,000	70,000	45,000	300 %	10,000	17 %
Total	255,000	290,000	315,000	35,000	14 %	25,000	9 %
Dividends:							
Preferred stock	15,000	21,000	21,000	6,000	40 %	—	—
Common stock	10,000	24,000	26,000	14,000	140 %	2,000	8 %
Total	25,000	45,000	47,000	20,000	80 %	2,000	4 %
Earned surplus at end of year	230,000	245,000	268,000	15,000	7 %	23,000	9 %

When absolute amounts or relative amounts appear out of line, conclusions, favorable or unfavorable, are not justified until investigation has disclosed the full story of the factors responsible for the change.

Percentage changes in the previous examples have been given in terms of the data for the year immediately preceding. With data covering more than two years, this procedure results in a changing

base that makes the comparison of relative changes over the years difficult. When comparisons of data for two or more periods are involved, it is frequently desirable to develop all comparisons in terms of the earliest period given. Each amount on the statement representing the base year is considered 100%. On succeeding statements the amount of each item is represented as a percentage of the base amount. The set of percentages for several years may thus be interpreted as trend values or as a series of index numbers relating to the particular items. If 1951 is used as the base year, comparative profit and loss data for the Marshall Company may be presented in the manner shown below.

When relationships for a certain base period can be considered as "normal," a statement like the one below serves as a clearer medium for interpretation than those previously illustrated. For example, the comparative income statement on page 797 shows that sales increased 75%, then dropped 14%; sales returns increased 100%, then decreased 25%. Analyses were based on data for the year immediately

**MARSHALL COMPANY**  
**CONDENSED COMPARATIVE INCOME STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, AND 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1951-1953	
				AMOUNT	PER CENT	AMOUNT	PER CENT
Gross sales	1,000,000	1,750,000	1,500,000	750,000	75%	500,000	50%
Sales returns	50,000	100,000	75,000	50,000	100%	25,000	50%
Net sales	950,000	1,650,000	1,425,000	700,000	74%	475,000	50%
Cost of goods sold	630,000	1,200,000	1,000,000	570,000	90%	370,000	59%
Gross profit	320,000	450,000	425,000	130,000	41%	105,000	33%
Selling expenses	240,000	300,000	280,000	60,000	25%	40,000	17%
General expenses	100,000	110,000	100,000	10,000	10%	—	—
Total expenses	340,000	410,000	380,000	70,000	21%	40,000	12%
Net profits or loss* from operations	20,000*	40,000	45,000	60,000	—	65,000	—
Other income	50,000	65,000	75,000	15,000	30%	25,000	50%
	30,000	105,000	120,000	75,000	250%	90,000	300%
Other expenses	10,000	20,000	20,000	10,000	100%	10,000	100%
Net income before income tax	20,000	85,000	100,000	65,000	325%	80,000	400%
Income tax	5,000	25,000	30,000	20,000	300%	25,000	500%
Net income to earned surplus	15,000	60,000	70,000	45,000	300%	55,000	367%

preceding. The illustration on page 800 shows that sales increased 75% and 50% in terms of 1951 results. It also shows that sales returns increased 100% and 50% as compared with 1951 figures. Here it is shown that, while sales returns increased disproportionately as compared with sales in 1952, the increase was proportionate in 1953, both sales and returns increasing 50% in terms of 1951 data.

Analysis in terms of a base year is a desirable practice, not only for the comparison of entire statements but also for the comparison of various related single items, ratios, and other pertinent data. Data expressed in terms of a base year are well adapted for graphic presentation.

The changes in comparative statement balances may be reported in terms of percentages, as was illustrated in previous examples, or the changes may be reported in terms of ratios. A 50% increase in an item results in the designation of a ratio to the base figure of 1.5; a 25% decrease in an item results in a ratio to the base figure of .75. Plus and minus designations are thus avoided. Use of ratios instead of percentages is illustrated in the statement below.

**MARSHALL COMPANY**  
**CONDENSED COMPARATIVE INCOME STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, AND 1953**

	1951	1952	1953	INCREASE OR DECREASE*			
				1951-1952		1951-1953	
				AMOUNT	RATIO	AMOUNT	RATIO
Gross sales	1,000,000	1,750,000	1,500,000	750,000	1 75	500,000	1 50
Sales returns	50,000	100,000	75,000	50,000	2 00	25,000	1 50
Net sales	950,000	1,650,000	1,425,000	700,000	1 74	475,000	1 50
Cost of goods sold	630,000	1,200,000	1,000,000	570,000	1 90	370,000	1 59
Gross profit	320,000	450,000	425,000	130,000	1 41	105,000	1 33
Selling expenses	240,000	300,000	280,000	60,000	1 25	40,000	1 17
General expenses	100,000	110,000	100,000	10,000	1 10	-	1 00
Total expenses	340,000	410,000	380,000	70,000	1 21	40,000	1 12
Net profit or loss* from operations	20,000*	40,000	45,000	60,000	-	65,000	-
Other income	50,000	65,000	75,000	15,000	1 30	25,000	1 50
	30,000	105,000	120,000	75,000	3 50	90,000	4 00
Other expense	10,000	20,000	20,000	10,000	2 00	10,000	2 00
Net income before income tax	20,000	85,000	100,000	65,000	4 25	80,000	5 00
Income tax	5,000	25,000	30,000	20,000	5 00	25,000	6 00
Net income to earned surplus	15,000	60,000	70,000	45,000	4 00	55,000	4 67

In calculating changes in items, it may be observed that when a base figure is zero or a minus value, it is possible to indicate a dollar change but not to express the change in terms of a percentage. When there is a positive base figure, however, both absolute values and relative percentage values may be calculated. When ratio analysis is employed, ratios can be expressed only when two positive values are given. The foregoing principles are illustrated in the examples below:

	YEAR ENDED DECEMBER 31		INCREASE OR DECREASE*		
	1952	1953	AMOUNT	PER CENT	RATIO
Net profit or loss*	0	20,000	20,000	—	—
	0	2,000*	2,000*	—	—
	5,000*	2,000	7,000	—	—
	5,000*	10,000*	5,000*	—	—
	10,000	0	10,000*	100%*	—
	10,000	2,000*	12,000*	120%*	—
	10,000	35,000	25,000	250%	3 50
	10,000	8,000	2,000*	20%*	80
	10 000	10 000	—	—	1 00

While the illustrations show comparisons in terms of annual data, it is frequently desirable to develop comparative data for shorter periods. It would be possible, for example, to prepare comparative statements for monthly or quarterly intervals. Furthermore, in the case of profit and loss data, it may be desirable to compare a current month with the same month of preceding years, or cumulative data for the current year to date with data for the equivalent period of preceding years.

A number of companies have adopted the thirteen-month year, dividing the calendar year into thirteen equal periods of four weeks. Variations for the total number of days and number of Saturdays and Sundays found in the calendar months are thus eliminated in the development of comparative "monthly" statements. More reliable conclusions can be drawn from analyses developed from data for periods of comparable length.

**COMPARATIVE STATEMENTS—VERTICAL ANALYSIS** Comparative data may include analyses in terms of percentages or ratios based upon the related data of each individual period. For example, in presenting comparative operating data, it may be desirable to show the relationship of the component profit and loss elements to sales for each period. This procedure is known as *vertical*

*analysis.* Vertical analysis as applied to the comparative profit and loss data for the Marshall Company is illustrated below. Net sales is used as the base figure, or 100%. If analysis were to be made by means of ratios, net sales would be considered 1.00 and component items would be expressed in terms of this base.

**MARSHALL COMPANY**  
**CONDENSED COMPARATIVE INCOME STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, AND 1953**

	1951		1952		1953	
	AMOUNT	PER CENT	AMOUNT	PER CENT	AMOUNT	PER CENT
Gross sales	1,000,000	105 3%	1,750,000	106 1%	1,500,000	105 3%
Sales returns	50,000	5 3	100,000	6 1	75,000	5 3
Net sales	950,000	100 0%	1,650,000	100 0%	1,425,000	100.0%
Cost of goods sold	630,000	66 3	1,200,000	72 7	1,000,000	70.2
Gross profit	320,000	33 7%	450,000	27 3%	425,000	29.8%
Selling expenses	240,000	25 3%	300,000	18 2%	280,000	19 7%
General expenses	100,000	10 5	110,000	6 7	100,000	7 0
Total expenses	340,000	35 8%	410,000	24 9%	380,000	26 7%
Net profit or loss* from operations	20,000 <sup>†</sup>	2 1%*	40,000	2 4%	45,000	3 1%
Other income	50,000	5 3	65,000	3 9	75,000	5 3
	30,000	3 2%	105,000	6 3%	120,000	8 4%
Other expenses	10,000	1 1	20,000	1 2	20,000	1 4
Net income before income tax	20,000	2 1%	85,000	5 1%	100,000	7 0%
Income tax	5,000	5	25,000	1 5	30,000	2 1
Net income to earned surplus.	15,000	1 6%	60,000	3 6%	70,000	4 9%

While it may not be possible to specify a normal gross profit rate, it can be determined from the statement that a severe decline in the gross profit percentage took place in 1952 with a partial recovery in 1953. This would suggest that an analysis of the causes responsible for the increase in the cost of goods sold percentage be made. Notwithstanding the gross profit shrinkage, the net profit percentage on each dollar of sales increased in 1952 and again in 1953. This resulted from a reduced expense percentage per dollar of sales that more than compensated for the increased cost of goods sold. The comparative statement points to certain relationships and trends that merit further study for a full appreciation of the changes and the interpretation that may be placed on these.

When supporting schedules are prepared for the detail relating to totals on the condensed statement illustrated, individual items may

be expressed percentage-wise in terms of net sales or in terms of the total reported on the schedule. Sales salaries, for example, may be reported as a certain percentage of sales, with the selling expense schedule accounting for expenses totaling 25.3%; or the salaries may be reported as a percentage of total selling expenses, with the individual items on the schedule adding up to 100%.

Vertical analysis may be employed in the case of comparative balance sheets and surplus statements. On the balance sheet related items are expressed in percentages or ratios based upon total assets or total liabilities plus capital. A comparative balance sheet with percentage analysis for the Marshall Company is given below:

MARSHALL COMPANY  
CONDENSED COMPARATIVE BALANCE SHEET  
DECEMBER 31, 1951, 1952, 1953

	1951		1952		1953	
	AMOUNT	PER CENT	AMOUNT	PER CENT	AMOUNT	PER CENT
<b>ASSETS</b>						
Current assets	673,500	38%	955,500	40%	855,000	38%
Long-term investments	250,000	14	400,000	17	500,000	22
Plant and equipment (net)	675,000	38	875,000	37	775,000	34
Intangibles	100,000	6	100,000	4	100,000	4
Deferred charges	61,500	4	60,500	2	48,000	2
Total assets	1,760,000	100%	2,391,000	100%	2,278,000	100%
<b>LIABILITIES</b>						
Current liabilities	130,000	7%	546,000	23%	410,000	18%
Long-term debt	300,000	17	400,000	17	400,000	18
Total liabilities	430,000	24%	946,000	40%	810,000	36%
<b>CAPITAL</b>						
6% Preferred stock	250,000	14%	350,000	15%	350,000	15%
Common stock	750,000	43	750,000	31	750,000	33
Paid-in surplus	100,000	6	100,000	4	100,000	4
Earned surplus	230,000	13	245,000	10	268,000	12
Total capital	1,330,000	76%	1,445,000	60%	1,468,000	64%
Total liabilities and capital	1,760,000	100%	2,391,000	100%	2,278,000	100%

As in the case of profit and loss schedules, when supporting schedules are prepared to show the detail for group totals, individual items may be expressed as a percentage of balance sheet base figures or as a percentage of the schedule total.

In preparing a comparative earned surplus statement, either the beginning or the ending surplus balance may be used as the base for analysis. Use of the beginning surplus balance as a percentage base is illustrated on the following page.

**MARSHALL COMPANY**  
**COMPARATIVE EARNED SURPLUS STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, AND 1953**

	1951		1952		1953	
	AMOUNT	PER CENT	AMOUNT	PER CENT	AMOUNT	PER CENT
Earned surplus at beginning of year	240,000	100 %	230,000	100 %	245,000	100 %
Net income from income statement	15,000	6	60,000	26	70,000	29
Total	255,000	106 %	290,000	126 %	315,000	129 %
Dividends						
Preferred stock	15,000	6 %	21,000	9 %	21,000	9 %
Common stock	10,000	4	24,000	10	26,000	11
Total	25,000	10 %	45,000	19 %	47,000	20 %
Earned surplus at end of year	230,000	96 %	245,000	107 %	268,000	109 %

It should be observed that both horizontal and vertical analyses are required for a full understanding of business trends and financial and operating relationships.

### COMMON-SIZE STATEMENTS

Comparative statements that give only the vertical percentages or ratios for financial data without giving dollar values are known as *common-size statements* or *100% statements* since the comparative reports are expressed in terms of a common size or 100%. Common-size statements may be prepared for (1) the same business as of different dates or periods or (2) two or more business units as of the same date or period. For example, a common-size income statement for the Marshall Company comparing operations for 1951, 1952, and 1953, is illustrated at the top of the following page.

The example that is given at the bottom of page 806 illustrates the preparation of a common-size statement comparing balance sheet data for two different companies as of the same date. Here the relationships of the various items on the balance sheet for the Marshall Company are compared with those for the Norris Corporation as of December 31, 1953. This summary provides a clear display of comparative relationships of balance sheet elements for the two companies. It is readily seen, for example, that the proportion of the owners' equity for each company is approximately the same. While the Norris Corporation has a larger proportion of current obligations than the Marshall Company, its ratio of current assets to current liabilities far exceeds that of the Marshall Company, resulting in a much stronger current position.

**MARSHALL COMPANY**  
**CONDENSED COMMON-SIZE INCOME STATEMENT**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, AND 1953**

	1951	1952	1953
Gross sales	105 3%	106 1%	105 3%
Sales returns	5 3	6 1	5 3
Net sales	100 0%	100 0%	100 0%
Cost of goods sold	66 3	72 7	70 2
Gross profit	33 7%	27 3%	29 8%
Selling expenses	25 3%	18 2%	19 7%
General expenses	10 5	6 7	7 0
Total expenses	35 8%	24 9%	26 7%
Net profit or loss* from operations	2 1 1/2 *	2 4%	3 1%
Other income	5 3	3 9	5 3
	3 2%	6 3%	8 4%
Other expense	1 1	1 2	1 4
Net income before income tax	2 1%	5 1 1/2	7 0%
Income tax	5	1 5	2 1
Net income to earned surplus	1 6%	3 6 1/2	4 9%

**MARSHALL COMPANY AND NORRIS CORPORATION**  
**CONDENSED COMMON-SIZE BALANCE SHEET**  
**DECEMBER 31, 1953**

	MARSHALL COMPANY	NORRIS CORPORATION
<b>ASSETS</b>		
Current assets	38%	64%
Long-term investments	22	—
Plant and equipment (net)	34	35
Intangibles	4	—
Deferred charges	2	1
Total assets	100%	100%
<b>LIABILITIES</b>		
Current liabilities	18%	20%
Long-term debt	18	12
Deferred credit	—	2
Total liabilities	36%	34%
<b>CAPITAL</b>		
Preferred stock	15%	—
Common stock	33	46%
Paid-in surplus	4	5
Earned surplus	12	15
Total capital	64%	66%
Total liabilities and capital	100%	100%



The statement shows that while a decrease in income resulted from a decrease in the gross profit on sales and increased income tax, decreased operating expenses and an increase in other income more than compensated for the gross profit shrinkage. Thus it would appear that increased operating efficiency has been a significant factor in increasing profits.

It may be desirable to go further and analyze the change in the reported gross profit to determine what part is due to a change in sales volume and what part is due to a change in the gross profit on sales. To illustrate the analytical procedure involved, assume that sales prices of the Marshall Company in 1953 are 10% above those of 1952. A schedule summarizing the change in gross profit can be prepared as follows:

**MARSHALL COMPANY**  
**SCHEDULE OF ANALYSIS OF VARIATION IN GROSS PROFIT**  
**TO ACCOMPANY STATEMENT ACCOUNTING FOR VARIATION IN NET INCOME**  
**1953 AS COMPARED WITH 1952**

**Decrease in gross profit caused by:**

**Decrease in volume of sales:**

Actual net sales, 1952	\$1,650,000
Net sales, 1953, at 1952 prices ( $\$1,425,000 \div 1.10$ )	1,295,455
Volume decrease at 1952 prices	<u>\$ 354,545</u>

**Gross profit rate, 1952, applied to volume decrease**

( $\frac{450,000}{1,650,000} \times \$354,545$ ) equals decrease in gross profit resulting from decreased sales volume \$96,694

**Increase in gross profit rate:**

**Increased sales price:**

Actual net sales, 1953	\$1,425,000
Net sales, 1953, at 1952 prices	<u>1,295,455</u>
	\$ 129,545

**Less increase in cost of goods sold:**

Actual cost of goods sold, 1953	\$1,000,000
Cost of goods sold, 1953, on basis of 1952 cost percentage ( $\frac{1,200,000}{1,650,000} \times \$1,295,455$ )	942,149
	<u>57,851</u>
	71,694

Total decrease in gross profit			<u>\$25,000</u>
--------------------------------	--	--	-----------------

The foregoing schedule shows that, while sales decreased from \$1,650,000 to \$1,425,000, a decrease in sales volume of \$354,545 actually took place in terms of 1952 sales prices. This would have resulted in a decrease in the gross profit of \$96,694, were it not for an increase in the gross profit of \$71,694 arising from sales price increases of \$129,545 accompanied by cost increases of only \$57,851 in terms of 1952 prices and costs. Increased prices, then, offer the explanation for only a minor change in the business gross profit in spite of a relatively significant decrease in sales volume.

With information relating to the number of units sold, one can determine the effects upon gross profit of:

- (a) The change in sales as a result of the change in the number of units sold.
- (b) The change in sales as a result of the change in sales prices.
- (c) The change in cost of goods sold as a result of the change in the number of units sold.
- (d) The change in cost of goods sold as a result of the change in the unit cost prices.

To illustrate, assume in this case that the number of units of goods sold in 1953 by the Marshall Company was only 80% of those sold in 1952. A schedule can be prepared to analyze the change in gross profit as follows:

**MARSHALL COMPANY**  
**SCHEDULE OF ANALYSIS OF VARIATION IN GROSS PROFIT**  
**TO ACCOMPANY STATEMENT ACCOUNTING FOR VARIATION IN NET INCOME**  
**1953 AS COMPARED WITH 1952**

Decrease in gross profit caused by :

Decrease in net sales:

Decrease in sales due to change in number of units sold:

Actual net sales, 1952	\$1,650,000	
Net sales, 1953, in the absence of price change, would have been 80% of \$1,650,000, or	1,320,000	\$330,000

Less increase in sales due to change in sales price:

Actual net sales, 1953	\$1,425,000	
Net sales, 1953, at 1952 prices	1,320,000	105,000

Decrease in net sales \$225,000

Decrease in cost of goods sold:

Decrease in cost of goods sold due to change in number of units sold:

Actual cost of goods sold, 1952	\$1,200,000	
Cost of goods sold, 1953, in the absence of cost changes would have been 80% of \$1,200,000, or	960,000	\$240,000

Less increase in cost of goods sold due to change in cost prices:

Actual cost of goods sold, 1953	\$1,000,000	
Cost of goods sold, 1953, at 1952 costs	960,000	40,000

Decrease in cost of goods sold 200,000

Total decrease in gross profit \$ 25,000

The above analysis suggests that, while sales went down \$225,000, the drop would have been even greater as a result of the shrinkage in the number of units sold were it not for increases that were made in sales prices. The decreases in selling and general expenses for the year

had previously been interpreted as evidence of increased operating efficiency. It would now appear that this conclusion needs to be questioned, in view of the analysis showing a material reduction in the number of units sold. The gross profit analysis also shows that increases in sales prices exceeded the increased cost of goods sold, thus helping to maintain the gross profit at close to the total for the previous year in spite of the sales volume shrinkage. It would appear from an over-all view that the increased profit for the Marshall Company for 1953 is due to the rising prices rather than to greater managerial efficiency.

The schedule illustrated above can be prepared for a business that sells only a single uniform commodity. If several different commodities are sold, information concerning unit sales, sales prices, and costs for each would have to be assembled and separate schedules developed. The gross profit variations relating to each class of sales would thus be analyzed.

#### **BREAK-EVEN POINT ANALYSIS**

Financial statements are frequently analyzed to determine the business unit's *break-even point*, that level of sales which will just cover all costs and expenses. At the break-even point the business would neither make a profit nor incur a loss, but would merely "break even."

Analysis of comparative profit and loss data will reveal those costs and expenses that fluctuate with the volume of sales, known as *variable charges*, and those costs and expenses that remain constant in spite of such changing conditions, known as *fixed charges*. Variable items include cost of sales arising from purchases or production, sales commissions, shipping expenses, supplies, and similar items affected by the volume of sales. Fixed items include depreciation, taxes, insurance, heat and light, administrative salaries, and similar items that do not fluctuate with the volume of sales.

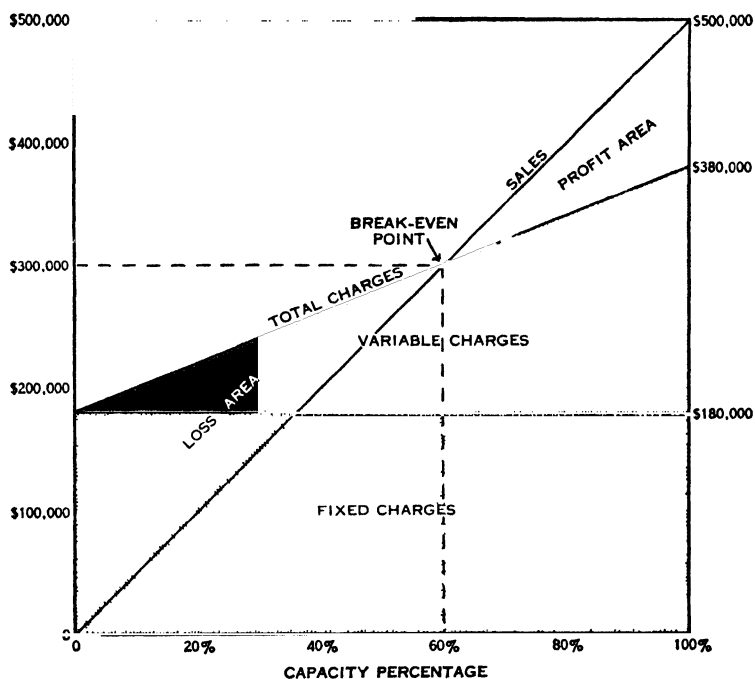
If all charges vary in direct proportion to sales and sales are made at a price in excess of such charges, there is no break-even point, for a profit is recognized from the first sale; here profit varies directly with the sales total. Whenever fixed charges are incurred, however, a break-even point is reached only when sales cover these charges plus whatever variable charges are involved in sales; a profit is realized only when the sales figure exceeds fixed charges plus the variable charges involved in sales.

The break-even point can be developed by means of a graph or it can be arrived at mathematically. In either case two amounts must be known: (1) the total fixed charges of all categories—production,

selling, general, and administrative; and (2) the relationship of variable charges of all categories to the sales figure. The break-even point can be determined graphically by plotting fixed and variable charges and sales information on a chart. When the maximum sales that can be achieved at full capacity or production are known, a full analysis of profit and loss at any sales level can be developed. To illustrate, assume the following facts for the Murray Manufacturing Corporation:

- (a) Total fixed charges are \$180,000.
- (b) Variable charges are 40% of sales.
- (c) The sale price of units, assuming full production, is \$500,000.

These data may be plotted as follows:



Graph Showing Break-Even Point

A number of observations can be made from the graph. To break even, sales of \$300,000 must be reached; stated differently, 60% of full capacity must be achieved. This is the point where the total charge line and the sales line intersect. At this point fixed charges are \$180,000 and variable charges are \$120,000 (40% of \$300,000).

The profit or loss, assuming any volume of sales, can be determined from the graph. The smaller the sales figure below the break-even point, the greater the loss; the larger the sales figure above the

break-even point, the greater the profit. Sales of \$250,000, for example, will result in a loss of \$30,000 ( $\$250,000 - [\$180,000 + 40\% \text{ of } \$250,000]$ ); sales of \$400,000 will produce a profit of \$60,000 ( $\$400,000 - [\$180,000 + 40\% \text{ of } \$400,000]$ ). Maximum sales will result in a profit of \$120,000 ( $\$500,000 - [\$180,000 + 40\% \text{ of } \$500,000]$ ).

The break-even point may be calculated in the following manner. Let X equal sales at the break-even point. Then X is equal to the sum of the fixed charges, \$180,000, plus the variable charges, which are 40% of X.

$$\begin{aligned} X &= \$180,000 + .4X \\ X - .4X &= \$180,000 \\ .6X &= \$180,000 \\ X &= \$300,000 \end{aligned}$$

It should be observed that the higher the fixed charges, the higher will be the break-even point. Assuming fixed charges of \$240,000 in the preceding example, the break-even point is reached at a higher level as follows:

$$\begin{aligned} X &= \$240,000 + .4X \\ X - .4X &= \$240,000 \\ .6X &= \$240,000 \\ X &= \$400,000 \end{aligned}$$

Under these conditions sales of \$400,000 are required in reaching the break-even point. With a sales figure at maximum capacity of \$500,000, this means that 80% of the full sales potential must be achieved to break even.

In reaching the foregoing conclusions, charges were classified as fixed or variable. It was assumed that fixed items do not vary regardless of the level of sales and that variable items vary in direct proportion to sales. Obviously, however, such conditions do not obtain in this precise manner in practice. Items classified as fixed frequently vary to some degree depending upon sales; on the other hand, variable items may not vary in direct proportion to sales as assumed. For example, economies of purchasing and production may serve to lower certain direct costs; many expenses, both variable and fixed, may rise sharply upon reaching a certain point and may contract markedly below a certain level. In view of the fact that actual conditions may vary from the assumptions that are required in developing the break-even analysis, this measurement should be accepted as offering only rough approximations.

Many practical applications may be made of break-even analysis. Break-even point information is useful in predicting the effects of an increase or a decrease in business. For example, in the illustration on page 811 if it is predicted that operations of the following year will

reach 90% of capacity, profits would be estimated at \$90,000 (\$450,000 - [\$180,000 + 40% of \$450,000]). This information may be used in the determination of policy with respect to property acquisitions, borrowings, and dividends.

Break-even point analysis is useful in making decisions concerning the expansion of plant facilities. For example, assume that the Murray Manufacturing Company, in view of operations at 90% capacity or \$450,000, considers an increase in plant facilities that will raise fixed charges to \$240,000 but that will raise maximum sales possibilities to \$800,000. Assume variable charges are 40% in either case. The following observations might be made:

	UNDER PRESENT CONDITIONS	UNDER PROPOSED CONDITIONS
Break-even point:	$X = \$180,000 + .4X$ or \$300,000	$X = \$240,000 + .4X$ or \$400,000
Profit assuming sales at 90% of present capacity, or \$450,000:	$\$450,000 - (\$180,000 + 40\% \text{ of } \$450,000)$ or \$90,000	$\$450,000 - (\$240,000 + 40\% \text{ of } \$450,000)$ or \$30,000
Sales necessary to reach profit of \$90,000:	$S(\text{Sales}) = \$180,000 + .4S + \$90,000$ or \$450,000	$S = \$240,000 + .4S + \$90,000$ or \$550,000
Maximum profit at capacity:	$\$500,000 - (\$180,000 + 40\% \text{ of } \$500,000)$ or \$120,000	$\$800,000 - (\$240,000 + 40\% \text{ of } \$800,000)$ or \$240,000

In deciding whether expansion is warranted at this stage, the increased break-even point, the decreased profit if sales remain \$450,000, and the increased sales required to produce the same profit would be weighed against the increased sales and profit potentials.

### STATEMENT OF APPLICATION OF FUNDS

Comparative balance sheet data show the change that has taken place in working capital. However, it may be of interest to determine the reasons for the change. To what extent did such factors as profits, property acquisitions, retirement of long-term debt, and the issuance of additional capital stock affect the company's working capital during the period? Analysis of comparative balance sheet data together with a review of activities of the period will reveal the sources and the dispositions of working capital. Information with respect to working capital is presented in the form of a special exhibit known as the statement of application of funds. Because of the importance of this statement, it is considered separately in Chapter 28.

## QUESTIONS

1. Explain how an understanding of accounting assists in the analysis and interpretation of financial statements.
2. What are the factors that one would look for in judging a company's (1) solvency, (2) stability, (3) profitability?
3. What are the advantages of statements prepared in comparative form?
4. Distinguish between horizontal and vertical analytical procedures. What special purpose does each serve?
5. Distinguish between a cumulative income statement and a comparative income statement. What purpose does each serve?
6. When data for more than two years are involved, what are the advantages of developing comparisons in terms of the earliest year given? What are the advantages of developing comparisons in terms of the preceding year?
7. What are the relative advantages of changes reported as percentages as compared with changes reported as ratios?
8. What is meant by a "thirteen-month year." What advantages and disadvantages can you name in the use of such a year for accounting purposes?
9. What is meant by a "common-size" statement?
10. What are the factors that are responsible for a change in a company's gross profit?
11. (a) The Marsh Co. reports an increase in gross profit in 1953 over 1952 of \$60,000. What other information would be useful in the evaluation of this increase? (b) Give possible unfavorable circumstances that might accompany such a change.
12. The Atlas Co. develops the following measurements for 1953 as compared with the year 1952. What additional information would you require before arriving at favorable or unfavorable conclusions for each item?
  - (a) Net income has increased \$50,000.
  - (b) Sales returns and allowances have increased by \$30,000.
  - (c) The gross profit rate has increased by 5%.
  - (d) Purchases discounts have increased by \$5,000.
  - (e) Cash has increased by \$85,000.
  - (f) Inventories have decreased by \$100,000.
  - (g) Earned surplus has decreased by \$300,000.
13. Distinguish between fixed charges and variable charges.
14. (a) What is meant by a company's "break-even point"? (b) How is it calculated? (c) Suggest certain practical applications that can be made of break-even point analysis.
15. Assuming the same total costs and income figures at full production for two companies, what will cause a lower break-even point for one company than for the other?

## EXERCISES

1. Indicate the dollar change, the percentage change, and also the ratio that would be reported for each case below, assuming horizontal analysis:

Gain or loss\* on sale of securities:

	1952	1953		1952	1953
(a)	\$20,000	\$45,000	(f)	\$ 0	\$20,000*
(b)	50,000	20,000	(g)	5,000*	5,000
(c)	0	30,000	(h)	5,000	20,000*
(d)	40,000	0	(i)	10,000*	10,000*
(e)	20,000	30,000*	(j)	10,000	10,000

2. The following comparative data are developed for the Moore Company:

	1952	1953
Gross sales . . . . .	\$510,000	\$760,000
Sales returns . . . . .	10,000	10,000
Net sales . . . . .	\$500,000	\$750,000
Cost of goods sold . . . . .	300,000	465,000
Gross profit . . . . .	\$200,000	\$285,000
Operating expenses . . . . .	220,000	240,000
Net profit or loss* from operations . . . . .	\$ 20,000*	\$ 45,000
Other income . . . . .	5,000	5,000
	\$ 15,000*	\$ 50,000
Other expense . . . . .	10,000	10,000
Net income or loss* before income tax . . . . .	\$ 25,000*	\$ 40,000
Income tax . . . . .		10,000
Net income or loss* to earned surplus . . . . .	\$ 25,000*	\$ 30,000

- What was the net sales percentage increase for 1953?
- What was the gross profit percentage increase for 1953?
- What was the mark-up percentage on cost for 1952 and 1953?
- What is the percentage of net income or loss to net sales?
- What is the net profit dollar increase for 1953?
- What are the factors accounting for the variation in net operating results?

3. Comparative data for the Winston Co. appear below:

	1952	1953
Sales . . . . .	\$5,000,000	\$6,875,000
Cost of goods sold . . . . .	3,000,000	4,262,500
Gross profit . . . . .	\$2,000,000	\$2,612,500

(a) If it is assumed that sales prices in 1953 average 25% above those for 1952, what part of the change in gross profit is due to a change in the sales volume and what part is due to a change in the gross profit rate?

(b) Assume, instead, that a single commodity is sold, and that the sales price of this commodity was \$2.50 in 1952 and \$2.75 in 1953. Prepare a statement analyzing the change in gross profit in terms of volume and price changes for both sales and costs.

4. From the following data for the Foster Co., explain the causes for the reduced profit supported by a detailed analysis of the causes for the change in gross profit

	1952	1953
Sales	20,000 units @ \$4 \$80,000	25,000 units @ \$4.20 \$105,000
Cost of goods sold	50,000	80,000
	<hr/>	<hr/>
Operating expenses	\$30,000 10,000	\$ 25,000 15,000
Net income	\$20,000	\$ 10,000

5. It is determined that the variable charges for the Forrester Company are 40% of sales. Sales at capacity operations are \$1,000,000. What are the break-even points, assuming that total fixed charges are (a) \$150,000, and (b) \$450,000?

6. The total fixed charges for the Williams Manufacturing Co. are \$120,000; variable charges are 25% of the product sales price. Units produced sell for \$5 each. (a) How many units must be sold for the company to break even? (b) How many units must be sold for the company to realize a net income of \$10,000?

7. The Westholme Corporation shows the following results for 1953:

Sales	\$500,000
Fixed costs and expenses	\$350,000
Variable costs and expenses	100,000
	<hr/>
Net income	\$ 50,000

Operations during 1953 were at 80% of capacity. Management assumes that capacity can be increased by 50% by plant remodeling and enlargement, which will increase fixed expenses by \$200,000 annually. Variable costs and expenses are expected to remain at 20% of sales.

- Compute the break-even point under both current and proposed conditions.
- Compute the profits at capacity under both current and proposed conditions.
- Compute the sales necessary under the proposed plan to reach the equivalent of maximum profits under current conditions.

## PROBLEMS

26-1. The following tabulations summarize operations of the Middleton Corporation for 1952 and 1953:

	1952	1953
Sales . . . . .	\$205,000	\$260,000
Sales returns . . . . .	5,000	10,000
Net sales . . . . .	\$200,000	\$250,000
Cost of goods sold . . . . .	120,000	170,000
Gross profit . . . . .	\$ 80,000	\$ 80,000
Selling and general expenses . . . . .	50,000	65,000
Net profit from operations . . . . .	\$ 30,000	\$ 15,000
Other expenses . . . . .	10,000	20,000
Net income or loss* before income taxes . . . . .	\$ 20,000	\$ 5,000*
Income taxes . . . . .	5,000	
Net income or loss* to earned surplus . . . . .	\$ 15,000	\$ 5,000*

(1) Prepare a comparative income statement showing dollar changes and percentage changes for 1953 as compared with 1952.

(2) Prepare a comparative income statement offering a percentage analysis of component profit and loss items in terms of net sales for each year.

(3) Prepare a statement accounting for the variation in net income for 1953 as compared with 1952.

26-2. The financial condition of McGraw, Inc. is summarized below:

ASSETS	1952	1953
Current assets:		
Cash on hand and on deposit	\$ 60,000	\$ 40,000
U. S. Government securities at cost	85,000	65,000
Notes and accounts receivable, less allowance	240,000	280,000
Raw materials and supplies	210,000	300,000
Goods in process	160,000	210,000
Finished goods	300,000	450,000
Miscellaneous prepaid items	20,000	20,000
	<u>\$1,075,000</u>	<u>\$1,365,000</u>
Investments:		
Bond sinking fund	\$ 300,000	\$ 350,000
Investment in properties not in current use	250,000	250,000
	<u>\$ 550,000</u>	<u>\$ 600,000</u>

	1952	1953
Plant and equipment at cost, less allowance. . . . .	\$ 800,000	\$ 750,000
Intangible assets, less amortization . . . . .	\$ 150,000	\$ 125,000
Deferred charges:		
Bond discount and expense	\$ 30,000	\$ 25,000
Miscellaneous long-term deferrals	20,000	15,000
	\$ 50,000	\$ 40,000
Total assets . . . . .	\$2,625,000	\$2,880,000
<b>LIABILITIES</b>		
Current liabilities:		
Notes and accounts payable . . . . .	\$ 140,000	\$ 260,000
Income taxes payable . . . . .	20,000	40,000
Accrued payrolls, interest, and taxes . . . . .	25,000	40,000
Cash dividends payable . . . . .	15,000	20,000
Miscellaneous items payable . . . . .	5,000	5,000
	\$ 205,000	\$ 365,000
Long-term debt—10-year first mortgage bonds . . . . .	\$ 250,000	\$ 250,000
Estimated employee pensions payable	\$ 130,000	\$ 150,000
Deferred credits . . . . .	\$ 30,000	\$ 25,000
Total liabilities	\$ 615,000	\$ 790,000
<b>CAPITAL</b>		
Capital stock:		
4½% preferred stock, par \$25 . . . . .	\$ 500,000	\$ 500,000
No-par common stock, stated value \$10 . . . . .	500,000	500,000
	\$1,000,000	\$1,000,000
Surplus:		
Paid-in surplus on sale of common stock . . . . .	\$ 650,000	\$ 650,000
Earned surplus — appropriated . . . . .	160,000	200,000
— free . . . . .	200,000	240,000
	\$1,010,000	\$1,090,000
Total capital . . . . .	\$2,010,000	\$2,090,000
Total liabilities and capital . . . . .	\$2,625,000	\$2,880,000

*Instructions:* (1) Prepare a comparative balance sheet showing dollar changes and changes in terms of ratios for 1953 as compared with 1952.

(2) Prepare a common-size balance sheet comparing financial structure ratios for 1953 with those for 1952.

26-3. Statements for the Stanfield Manufacturing Co are given below and on pages 820 and 821

### STANFIELD MANUFACTURING CO.

#### BALANCE SHEETS

DECEMBER 31, 1951, 1952, 1953

ASSETS	1951	1952	1953
Current assets	\$ 760,000	\$ 990,000	\$1,215,000
Long-term investments	300,000	250,000	300,000
Plant and equipment (net)	1,050,000	980,000	1,350,000
Intangibles	150,000	140,000	180,000
Total assets	<u>\$2,260,000</u>	<u>\$2,360,000</u>	<u>\$3,045,000</u>
LIABILITIES			
Current liabilities	\$ 310,000	\$ 370,000	\$ 320,000
Long-term debt (5%)	200,000	200,000	300,000
Deferred credits	20,000	30,000	25,000
Total liabilities	<u>\$ 530,000</u>	<u>\$ 600,000</u>	<u>\$ 645,000</u>
CAPITAL			
6% Cumulative, non-participating preferred stock, par \$50	\$ 500,000	\$ 500,000	\$ 500,000
Common stock, par \$50	1,000,000	1,000,000	1,500,000
Paid-in surplus	250,000	250,000	350,000
Earned surplus (Deficit*)	20,000*	10,000	50,000
Total capital	<u>\$1,730,000</u>	<u>\$1,760,000</u>	<u>\$2,400,000</u>
Total liabilities and capital	<u>\$2,260,000</u>	<u>\$2,360,000</u>	<u>\$3,045,000</u>

### STANFIELD MANUFACTURING CO.

#### INCOME STATEMENTS

FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, 1953

	1951	1952	1953
Gross sales	\$1,800,000	\$2,400,000	\$2,800,000
Sales returns	40,000	80,000	100,000
Net sales	<u>\$1,760,000</u>	<u>\$2,320,000</u>	<u>\$2,700,000</u>

	1951	1952	1953
Beginning finished goods inventory . . . .	\$ 230,000	\$ 220,000	\$ 330,000
Cost of goods manufactured . . . . .	1,230,000	1,630,000	1,840,000
Goods available for sale . . . . .	\$1,460,000	\$1,850,000	\$2,170,000
Ending finished goods inventory . . . . .	220,000	330,000	350,000
Cost of goods sold . . . . .	\$1,240,000	\$1,520,000	\$1,820,000
Gross profit . . . . .	\$ 520,000	\$ 800,000	\$ 880,000
Selling expenses . . . . .	\$ 400,000	\$ 480,000	\$ 560,000
General and administrative expenses . . .	160,000	170,000	180,000
Total operating expenses . . . . .	\$ 560,000	\$ 650,000	\$ 740,000
Net profit or loss* from operations . . .	\$ 40,000*	\$ 150,000	\$ 140,000
Other income . . . . .	30,000	30,000	40,000
	\$ 10,000*	\$ 180,000	\$ 180,000
Other expense . . . . .	20,000	20,000	40,000
Net income or loss* before income taxes .	\$ 30,000*	\$ 160,000	\$ 140,000
Income taxes . . . . .		60,000	50,000
Net income or loss* to earned surplus . .	\$ 30,000*	\$ 100,000	\$ 90,000

STANFIELD MANUFACTURING CO.  
SCHEDULES OF COST OF GOODS MANUFACTURED  
FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, 1953

	1951	1952	1953
Beginning raw materials inventory . . . .	\$ 180,000	\$ 160,000	\$ 210,000
Raw materials purchases . . . . .	600,000	920,000	1,080,000
	\$ 780,000	\$1,080,000	\$1,290,000
Less: Ending raw materials inventory . .	160,000	210,000	300,000
Cost of raw materials . . . . .	\$ 620,000	\$ 870,000	\$ 990,000
Direct labor . . . . .	360,000	440,000	510,000
Manufacturing expenses . . . . .	300,000	360,000	380,000
	\$1,280,000	\$1,670,000	\$1,880,000
Add: Beginning goods in process in- ventory . . . . .	150,000	200,000	240,000
	\$1,430,000	\$1,870,000	\$2,120,000
Less: Ending goods in process in- ventory . . . . .	200,000	240,000	280,000
Cost of goods manufactured . . . . .	\$1,230,000	\$1,630,000	\$1,840,000

**STANFIELD MANUFACTURING CO.**  
**EARNED SURPLUS STATEMENTS**  
**FOR THE YEARS ENDED DECEMBER 31, 1951, 1952, 1953**

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Earned surplus or deficit* at the beginning of the year . . . . .	\$ 10,000	\$ 20,000*	\$ 10,000
Net income per income statement . . . . .	30,000*	100,000	90,000
		\$ 80,000	\$100,000
Cash dividends:			
Preferred stock . . . . .		\$ 60,000	\$ 30,000
Common stock . . . . .		10,000	20,000
		\$ 70,000	\$ 50,000
Earned surplus or deficit* at the end of the year . . . . .	\$ 20,000*	\$ 10,000	\$ 50,000

*Instructions:* Prepare comparative statements for the three-year period showing dollar and percentage changes in terms of 1951, which is to be considered the base period.

**26-4.** (a) From the data for the Stanfield Manufacturing Co. given in Problem 26-3, develop a comparative income statement for the three-year period, offering percentage analysis of component profit and loss items in terms of net sales for each period.

(b) Prepare a comparative schedule of cost of goods manufactured for the three-year period in support of the comparative income statement, offering percentage analysis of component cost of goods manufactured items in terms of the total cost of goods manufactured for each year.

**26-5.** From the data for the Stanfield Manufacturing Co. given in Problem 26-3, prepare a condensed common-size balance sheet comparing financial structure percentages for the three-year period.

**26-6.** From the data for the Stanfield Manufacturing Co. given in Problem 26-3, prepare statements accounting for the variation in net income (1) for 1953 as compared with 1951, and (2) for 1953 as compared with 1952.

**26-7.** The Vermont Company, which sells a single commodity, shows the following operating results for a three-year period:

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Sales . . . . .	\$4,500,000	\$6,000,000	\$6,200,000
Cost of goods sold	2,925,000	4,080,000	4,216,000
Gross profit	\$1,575,000	\$1,920,000	\$1,984,000
Expenses . . . . .	1,200,000	1,400,000	1,500,000
Net income . . . . .	\$ 375,000	\$ 520,000	\$484,000

Sales prices of the commodity sold were as follows: in 1951, \$2.25; in 1952, \$2.40; in 1953, \$2.50.

*Instructions:* Prepare statements for 1952 and 1953 analyzing the change in gross profit as compared with the year immediately preceding in terms of volume changes and price changes for both sales and costs.

**26-8.** Comparative profit and loss data for the Ralph Company for 1952 and 1953 follow:

	1952	1953
Sales.....	\$2,688,000	\$3,450,000
Cost of goods sold.....	1,920,000	2,760,000
Gross profit.....	\$ 768,000	\$ 690,000
Expenses.....	500,000	550,000
Net income.....	\$ 268,000	\$ 140,000

*Instructions:* Prepare a statement analyzing the variation in gross profit, giving as much information as can be determined concerning factors responsible for the change, under each of the following assumptions:

- (1) No data are available concerning price and volume changes.
- (2) Sales prices in 1953 are 20% above those in 1952.
- (3) Total units sold in 1953 are 25% above those sold in 1952.

**26-9.** The total of all fixed expenses of Masonry Products, Inc. is estimated to be \$50,000; the variable expenses, \$20,000 at full capacity. The estimated sales price of goods sold at full capacity is \$80,000. Assume that fixed charges are constant at all rates of business activity and that variable charges vary in direct proportion to sales.

*Instructions:* (1) Draw a chart showing the above assumptions and also calculate the break-even point.

(2) Calculate the break-even point, assuming estimates to be the same except that the total charges of \$70,000 at full capacity is composed of only \$25,000 fixed and \$45,000 variable.

**26-10.** The following data are determined for the Greer Manufacturing Co.: up to 40% activity or sales, the fixed expenses are \$500,000; above 40%, the fixed expenses are \$600,000. The variable expenses are estimated as follows:

RATE OF ACTIVITY OR SALES	ESTIMATED VARIABLE EXPENSES	RATE OF ACTIVITY OR SALES	ESTIMATED VARIABLE EXPENSES
10% .....	\$300,000	60% .....	\$620,000
20% .....	400,000	70% .....	740,000
30% .....	460,000	80% .....	775,000
40% .....	500,000	90% .....	790,000
50% .....	600,000	100% .....	800,000

The sales at 100% capacity are assumed to be \$2,000,000.

*Instructions:* Construct a chart and determine the approximate break-even point from the chart.

**26-11.** The Pattern Co. has prepared the following summary relating to current activities at capacity and estimated activities at capacity with proposed enlarged facilities:

	WITH PRESENT FACILITIES		WITH ENLARGED FACILITIES	
Sales. . . . .		\$1,000,000		\$1,500,000
Fixed charges . . . . .	\$600,000		\$850,000	
Variable charges . . . . .	250,000	850,000	300,000	1,150,000
Net income . . . . .		\$ 150,000		\$ 350,000

*Instructions:* (1) Calculate the break-even point under present and under proposed conditions.

(2) Calculate the sales necessary under proposed conditions in reaching current income at capacity operations.

(3) Calculate the result from operations if sales do not exceed the present total under proposed conditions.

**26-12.** The Hobson Corporation, which has been operating at capacity, shows the following results for 1953:

SUMMARY OF OPERATIONS — 1953

Sales		\$500,000
Fixed costs and expenses	\$300,000	
Variable costs and expenses	125,000	425,000
Net income . . . . .		\$ 75,000

Management assumes that sales can be increased 50% by improving and enlarging the plant. It is estimated that such a program will increase fixed expenses by 40%; however, variable expenses are expected to decrease about 5% in terms of sales as a result of the improved plant facilities.

*Instructions:* (1) Calculate the break-even point under present conditions and under proposed conditions.

(2) Calculate the sales necessary under proposed conditions if the current income is to be maintained.

(3) Calculate the income if operations under proposed conditions reach 80% of capacity.

(4) Calculate the maximum income that can be realized under proposed conditions.

**26-13.** The Clark Metals Co. manufactures three different models of a single product. The following data are available:

<u>Model Number</u>	<u>Annual Sales Budget (Units)</u>	<u>Budgeted Unit Sales Price</u>	<u>Budgeted Sales Allowances for a Year</u>
100	30,000	\$15 00	\$1,260
200	16,000	18 00	480
300	10,000	25 00	410

1953 ESTIMATES

<u>Model Number</u>	<u>Quantity Budgeted For Production</u>	<u>Over-all Estimated Cost per Unit</u>		
		<u>Total</u>	<u>Variable Cost</u>	<u>Non-Variable Cost</u>
100      ..      .	30,500	\$15 072	\$ 9 871	\$5 201
200	15,000	17 335	10 250	7 085
300	10,000	23 756	15 436	8 320

*Instructions:* Prepare a schedule, supported by computations, showing the sales quantity and the sales dollar figure for each model necessary to enable the company to cover its costs. (A.I.A. adapted)

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***Statement Analysis  
Special Ratios and Measurements*****EXTENSIONS OF  
HORIZONTAL AND  
VERTICAL PROCEDURES**

The importance of comparative reports, as well as the special analyses that may be developed from such data, was discussed in the preceding chapter. However, it has already been suggested that of equal importance is the development of appropriate ratios and measurements based upon the data of the single period. For example, it is significant to show how the net income figure for the current period compares with net incomes of prior periods. It is important to determine the relationship of the net income for the current year to the capital. Furthermore, if the relationships developed from data of the current period are to have the widest interpretative value, they should be compared with similar relationships for previous periods. Comparative data, relationships as of a certain date, and trends for such relationships are thus given expression.

The measurement of changes in financial data from one period to another was called horizontal analysis. The measurement of individual items in terms of other items as of the same date or period was called vertical analysis. A number of special measurements developed from financial data for a single period will be illustrated in this chapter. These represent an extension of the vertical analysis procedure. The presentation of such measurements in comparative form represents the further application of the horizontal procedure.

There are a great many special measurements that may be developed from balance sheet, income statement, and supplementary financial data as of a certain date or period. Such measurements may be divided into two classes: (1) those that analyze balance sheet position, and (2) those that analyze operating results. A number of representative measurements of both classes will be suggested. Some of these will have special significance to particular groups. Other measurements may be of general interest to all groups. Creditors, both present and potential, for example, are concerned with the ability of a company to pay current obligations and require information concerning the ratio of current assets to current liabilities. Stockholders, both present and potential, are concerned with earnings and are interested in the company's earnings per share of stock. Management

is concerned with the liquidity of the merchandise stock and requires information concerning the number of times the stock has turned over during the past period. All parties are vitally interested in the profitability of operations and desire information concerning the relationship of earnings to both creditor and ownership equities.

The analyses that are described and illustrated in this chapter should not be considered all-inclusive; other special ratios and measurements may be suggested to the various groups, depending upon their particular interests. It should be emphasized once again that arbitrary conclusions cannot be reached from an individual ratio or measurement; but this information, together with adequate investigation and study, may lead to a satisfactory interpretation and evaluation of financial data. The analyses to be developed are based upon the financial statements for the Marshall Company for 1951, 1952, and 1953 as presented in the preceding chapter.

### **CURRENT RATIO**

A fundamental measurement in the analysis of balance sheet position involves the comparison of current assets with current liabilities as of a certain date. Total current assets divided by total current liabilities gives the ratio of current assets to current liabilities, variously referred to as the *current ratio*, the *working capital ratio*, or the *banker's ratio*.

The current ratio is a valuable measure of the ability of a business unit to meet its current obligations. Since it is a measure of liquidity, care must be taken to determine that the proper items have been included in the current asset and current liability categories. Ordinarily a ratio of less than 2 to 1 is regarded as unsatisfactory. A comfortable margin of current assets over current liabilities is assurance that the business will be able to meet maturing obligations even in the event of an unfavorable turn in business conditions and the shrinkage of values on the realization of such items as marketable securities, receivables, and inventories. Bond indentures frequently require that a current ratio of 3 to 1 or higher be maintained during the life of the bond issue.

In considering current condition, reference is frequently made to a company's *working capital*. This term is variously used to indicate total current assets or simply the excess of current assets over current liabilities. When the term "working capital" is used to indicate total current assets, the term "net working capital" is used to represent the excess of current assets over current liabilities. Because of the differences in the use of the term "working capital," care must be

exercised to interpret the term in accordance with the definition that is placed on it. Here "working capital" is used to denote the excess of current assets over current liabilities.

The amount of working capital and the current ratio for the Marshall Company for 1952 and 1953 are developed as follows:<sup>1</sup>

	1952	1953
Current assets .....	\$955,500	\$855,000
Current liabilities.....	546,000	410,000
Working capital .....	\$409,500	\$445,000
Current ratio .....	1.8 : 1	2.1 : 1

Ratio calculations are sometimes carried out to two or more decimal places; however, ratios do not need to be carried out beyond one decimal place unless some particularly significant interpretative value is afforded by the more refined measurement. The current ratio just given, as well as the other ratios to be described in this chapter, can be expressed in terms of percentages. The current ratio above, expressed as a percentage, would appear.

	1952	1953
Current ratio	175%	209%

From the standpoint of solvency it is more important to consider the ratio of current assets to current liabilities than the amount of working capital. For example, assume balance sheet data for Companies A and B as follows:

#### COMPANY A

Total current assets	400,000	Total current liabilities	50,000
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#### COMPANY B

Total current assets	1,050,000	Total current liabilities	700,000
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Both Company A and Company B have a working capital of \$350,000, but Company A has a current ratio of 8:1 while Company B has a current ratio of 1.5:1. The short-term creditors of Company A are more certain of receiving prompt and full payment than those of Company B. Bankers would normally be more favorable to Company A on a request for a short-term loan than to Company B.

<sup>1</sup>Frequently, comparative data for more than two years are required in judging the trend of relationships. Analyses for only two years are given in the examples in this chapter, since these are sufficient to illustrate the comparative procedures involved.

It is possible, however, to overemphasize the importance of a high current ratio. Assume that a company is normally able to carry on its operations with current assets of \$200,000 and current liabilities of \$100,000. If the company finds itself with current assets of \$500,000, current liabilities remaining at \$100,000, its current ratio has increased from 2:1 to 5:1. Actually, however, the company has considerably more working capital than it actually requires.

The amount of working capital required by a particular enterprise depends upon both its size and the character of its business. A company doing business for cash and enjoying a rapid inventory turnover does not require as much working capital as a company selling a product on long-term payments, assuming the same volume of business for each. However, the current ratio for individual businesses of similar character may vary depending upon the nature of their activities and their particular requirements.

#### **ACID-TEST RATIO**

A test of immediate solvency is made by comparing the sum of cash, readily marketable securities, notes receivable, and accounts receivable, known as the *quick assets*, with current liabilities. The total of the quick assets when divided by current liabilities gives the ratio of quick assets to current liabilities, known as the *acid-test ratio* or *quick ratio*. Some time may be required in the conversion of raw materials, goods in process, and finished goods into receivables and then receivables into cash. A company with a satisfactory current ratio may be in an unsatisfactory condition in terms of immediate solvency when inventories form a significant part of the current asset total. This is revealed by the acid-test ratio. In developing the ratio, close inspection must be given to receivables and investments included in the asset total. There may be instances where these may actually be less liquid than inventories.

Normally one looks for a ratio of quick assets to current liabilities of not less than 1 to 1. Again, however, special factors of the particular unit must be considered. Questions such as the following should be considered: What is the make-up of the quick assets? What special requirements are made by current activities upon these assets? How soon are the current payables due? The acid-test ratio for the Marshall Company is shown at the top of the opposite page.

#### **OTHER MEASURES OF WORKING CAPITAL POSITION**

It may be desirable to develop other ratios analyzing the working capital position of the company. For example, it may be of interest to show the relationship of total current assets to total assets, of in-

	<u>1952</u>	<u>1953</u>
Quick assets:		
Cash .....	\$100,500	\$ 60,000
Marketable securities .....	150,000	150,000
Receivables (net) ..	<u>375,000</u>	<u>420,000</u>
Total quick assets. . . . .	\$625,500	\$630,000
Total current liabilities .. . . .	\$546,000	\$410,000
Acid-test ratio .....	<u>1.1 : 1</u>	<u>1.5 : 1</u>

dividual current assets such as receivables and inventories to total current assets, and of individual current assets to total assets. In the case of liabilities, relationships may be developed for current liabilities and total liabilities, individual current liabilities and total current liabilities, and individual current liabilities and total liabilities. Vertical analysis as applied to comparative statements in the previous chapter made available such data and also reported the changes and the trends in such relationships over a period of years. Individual current assets may also be compared with individual current liabilities or with the current liabilities total. For example, the relationships of cash to accounts payable and of cash to total current liabilities may be developed for analysis purposes.

The above-mentioned comparisons make available information concerning the relative liquidity of total assets and the maturity of total obligations, as well as the structure of working capital and shifts within the current group. The latter data are significant in view of the fact that all items within the current classification are not equally current. What may be considered reasonable relationships in the analysis of the working capital position again depends upon the particular enterprise that is being analyzed.

### **ANALYSIS OF RECEIVABLES**

There are special tests that may be applied in considering the liquidity of two significant working capital elements, receivables and inventories. In the case of receivables, analysis is directed to evaluation of both the size of the receivables carried and the quality of the receivables.

*Accounts Receivable Turnover.* The amount of receivables carried normally bears a close relationship to the sales volume. The receivable position and approximate collection time may be evaluated by calculation of the *turnover of accounts receivable*. This rate is determined by dividing net sales for the period by the average accounts and notes receivable from trade debtors. In developing a representative average receivables figure, monthly balances should be used if available.

The average receivables figure is calculated from thirteen monthly balances, those of January 1, January 31, February 28, etc.

Assume that all receivables of the Marshall Company arose from sales and that only balances of receivables at the beginning and the end of the year are available in determining the average receivables. Receivable turnover figures are calculated as follows:

	1952	1953
Net sales.....	\$1,650,000	\$1,425,000
Net receivables:		
Beginning of year.....	\$ 333,500	\$ 375,000
End of year.....	\$ 375,000	\$ 420,000
Average receivables.....	\$ 354,250	\$ 397,500
Receivables turnover within year.....	4.7	3.6

*Number of Days' Sales in Receivables.* Average accounts are sometimes expressed in terms of average days' sales uncollected. Information is thus offered concerning the average time required to collect receivables.

To illustrate this calculation, assume 300 business or sales days for the Marshall Company. Annual dollar sales may be divided by 300 to find average daily sales. Average receivables divided by average daily sales then gives the number of days' sales in average receivables. This procedure is applied to the data for the Marshall Company below:

	1952	1953
Average receivables.....	\$ 354,250	\$ 397,500
Net sales.....	\$1,650,000	\$1,425,000
Average daily sales (net sales $\div$ 300).....	\$ 5,500	\$ 4,750
Number of days' sales in average receivables	64	84

The same measurements can be obtained by simply dividing the number of days representing the year by the turnover rates of 4.7 and 3.6 for 1952 and 1953 respectively, as developed earlier. A comparable number of days should be used in developing comparisons. Computations are normally based on the calendar year consisting of 365 days or a business year consisting of 300 days (365 days less Sundays and holidays).

Instead of developing the number of days' sales in average receivables, it would be possible to report the number of days' sales in receivables at the end of the period. This information for the Marshall Company is presented below:

	1952	1953
Receivables at end of period.....	\$375,000	\$420,000
Average daily sales.....	\$ 5,500	\$ 4,750
Number of days' sales in receivables at the end of the period.....	68	88

What constitutes a reasonable number of days in receivables varies with the individual business. The proportion of cash sales included in the sales figure, as well as the terms relating to credit sales, must be considered in interpreting this measurement. For example, when all merchandise is sold on account on terms of net 60 days, a period of 40 days would not seem to be unreasonable, assuming that all sales are made on account. If half of the sales are for cash, however, there would be 80 days' sales in receivables at the end of the period.

Sales activity just before the close of the period should be considered in interpreting the relationships that are developed. If sales are unusually light or heavy just before the end of the period, receivables are affected and the measurements in turn distorted. When such unevenness prevails, it may be better to analyze accounts according to their due dates, as was illustrated on Chapter 7.

The problem of keeping accounts receivable at a minimum without losing desirable business is important. Every company must pay for the use of funds that it has borrowed, and it is expected to pay dividends on stock. The company's investment in accounts usually does not provide income. The cost of carrying these accounts must be covered by the margin of profit made on sales, which is fixed at the time of the sale. The longer the account is carried, the smaller will be the percentage return realized on the investment. In addition, heavier collection charges and bad debt losses must be considered.

In the attempt to gain new and continued business, credit is frequently granted for relatively long periods. The element of cost involved in granting long-term credit should be recognized. Assume that a business has an average daily sales volume of \$5,000 and the average amount of accounts receivable is \$250,000. The latter figure represents the average daily business done for 50 days. If collections and the credit period can be improved so that outstanding accounts receivable represent only 30 days' sales, then accounts receivable will be \$150,000. Assuming a cost of 6% to carry the accounts, the decrease of \$100,000 in accounts would represent a reduction in charges or an increase in profits of \$6,000 annually. Assuming that the company has 10,000 shares of stock outstanding, the reduction in average receivables will increase the per-share earnings by 60 cents.

#### **MERCHANDISE INVENTORY ANALYSIS**

In evaluating inventory position, procedures similar to those for evaluating receivables may be employed. Both the number of times the average inventory has been replenished during a fiscal period, known as the *merchandise*

turnover, and the number of days' sales in average inventories carried may be computed from inventory and profit and loss data.

*Merchandise Turnover.* The amount of merchandise carried in stock normally bears a close relationship to the sales volume. The inventory position and the approximate disposal time may be evaluated by calculation of the merchandise turnover. The merchandise turnover is determined by dividing the cost of goods sold by the average inventory for the period. Again, if available, monthly figures should be used in developing a representative average.

Assume that only the inventories at the beginning and the end of the year are available for the Marshall Company. Merchandise turnover figures are calculated as follows:

	1952	1953
Cost of goods sold.....	\$1,200,000	\$1,000,000
Merchandise inventory:		
Beginning of year.....	\$ 125,000	\$ 330,000
End of year.....	\$ 330,000	\$ 225,000
Average merchandise inventory.....	\$ 227,500	\$ 277,500
Merchandise turnover for the year.....	5.3	3.6

*Number of Days' Sales in Inventories.* Average inventories are sometimes expressed in terms of average days' sales. Information is thus afforded concerning the average time it takes to dispose of the inventory. The number of days' sales in inventories is calculated by dividing the average inventory by the average daily cost of goods sold. When a turnover figure has been calculated, the same measurement can be obtained by simply dividing the days in the year by the turnover figure for the year. The latter procedure is illustrated for the Marshall Company:

	1952	1953
Merchandise turnover for the year.....	5.3	3.6
Number of days' sales in average inventory (assuming a business year of 300 days).....	57	83

Instead of developing the number of days' sales in average inventories, the number of days' sales in inventories at the end of the period may be determined by dividing the ending inventory by the average daily cost of goods sold.

A company with departmental classifications for merchandise will find it desirable to support the inventory measurements for the company as a whole with individual measurements for each department, since there may be considerable variation among departments. A company manufacturing its product may compute turnovers for finished

goods, goods in process, and raw materials. The finished goods turnover is computed by dividing the cost of goods sold by the average finished goods inventory; the goods in process turnover is computed by dividing the cost of goods manufactured by the average goods in process inventory; and the raw materials turnover is computed by dividing the cost of raw materials used by the average raw materials inventory.

Equivalent valuation bases must be employed if measurements that are developed from inventory figures are to be comparable. Maximum accuracy in developing measurements is possible if information relating to cost of goods sold and inventories is available in terms of number of units.

The effect of seasonal factors on the size of inventories at the end of the period should be considered in the inventory analyses. Inventories may be abnormally high or low at the end of the period. Many companies adopt a fiscal year that ends when operations are at their lowest point. This is referred to as the adoption of the *natural business year*. When such a plan is adopted, stocks will normally be at their lowest point at the end of the period. The organization is able to take inventory and complete year-end closing most conveniently with inventories at minimum levels and selling activities at their low point. Under such circumstances, monthly inventory balances should be developed by the gross profits method as illustrated in Chapter 10 in arriving at a representative average inventory value.

The greater the rate of turnover of the stock of merchandise, the smaller is the amount of investment necessary for a given volume of business and consequently the higher is the rate of return on the investment. This conclusion is based on the assumption that the enterprise is able to purchase goods in smaller quantities sufficiently often at no disadvantage in price. If merchandise must be bought in very large quantities in order to get a favorable price, then the savings on quantity purchases must be weighed against the additional investment and increased costs of storage.

The financial advantage of an increased turnover figure may be illustrated as follows: Assume that the cost of sales figure for a year has been \$1,000,000, and the average inventory at cost, \$250,000; the rate of turnover, then, is 4. Assume that through careful buying the same volume of business can be maintained with an increased turnover of 5, or an average inventory of only \$200,000. If the cost of funds for carrying the inventory is 6%, the savings on \$50,000 will be \$3,000 annually. The above does not include possible advantages gained from a decrease in merchandise spoilage and obsolescence losses; the sav-

ing in costs of storage space, insurance, and taxes on the excess inventory; and the reduction in the risk of losses from price declines.

Inventory investments and turnover rates vary between different enterprises. The facts of each individual business unit must be judged in terms of its own financial structure and its own activities. Each business must plan an inventory policy that will avoid the extremes of a dangerously low stock that may impair sales volume and an overstocking of goods with a heavy capital investment attended by dangers of shrinking prices and possible difficulties in meeting the obligations arising from the purchases.

#### **RATIO OF OWNERS' CAPITAL TO LIABILITIES**

The relationship of the equities of the ownership group and the creditor group in total business assets may be measured in terms of ratios. The statements employing vertical analysis as given in the preceding chapter illustrated the development of such measurements. Instead of expression in terms of assets, owners' and creditors' equities may be expressed in terms of each other. For example, owners may have a 60% interest in total assets and creditors a 40% interest. Here one can say that the owners' interest is 150% of the creditors' interest in the business, or that the ratio of the ownership interest to liabilities is 1.5 to 1.

Comparative data summarizing ownership and creditor equities in assets or the relationship of the equities to each other show the changes taking place in equities. As the ownership equity rises in relation to the creditors' equity, the margin of protection to the creditor group goes up. From the point of view of the owners, an increase in the ownership equity makes the organization less vulnerable to a decline in the business cycle and possible inability to meet obligations, and also serves to reduce the expenses of carrying the debt.

However, it should not be overlooked that it is normally advantageous to supplement funds contributed by the owners with a certain amount contributed by a creditor group. The employment of funds contributed by creditors is known as *trading on the equity*. It is assumed that the additional earnings accruing to the business through use of "borrowed capital" will exceed the interest charged for the use of such funds. When the rate earned on borrowed funds exceeds the rate paid on borrowings, a gain by trading on the equity is said to have accrued to the stockholders; when the rate earned is less than that paid, a loss is incurred.

The ratio of owners' capital to total liabilities is considered in judging whether trading on the equity has been carried to an excess with

possible danger to business solvency from a long-term approach. The relationship of capital to liabilities for the Marshall Company follows:

	<u>1952</u>	<u>1953</u>
Total capital . . . . .	\$1,445,000	\$1,468,000
Total liabilities . . . . .	\$ 946,000	\$ 810,000
Ratio of capital to liabilities . . . . .	1.5:1	1.8:1

**RATIO OF PLANT AND EQUIPMENT TO LONG-TERM DEBT**

Comparisons may be made between plant and equipment and the total long-term debt.

When plant and equipment is pledged on the long-term obligations, this ratio indicates the protection afforded to the long-term creditor group, as well as the possibility for the expansion of long-term indebtedness on the basis of available security.

In the development of this ratio, present sound values of plant and equipment instead of book values should be used if available, since the protection to creditors as well as the ability of the business to borrow is based on the market values of the assets representing the security. If a sinking fund for the retirement of long-term indebtedness is maintained consisting of the company's own obligations that have been reacquired but not retired, this fund should be subtracted from the long-term debt in developing the ratio; a sinking fund consisting of other investments, however, would represent additional security on the indebtedness rather than a reduction in debt and is thus added to plant and equipment for purposes of this ratio. Normally, long-term creditors limit their loans to 50 to 60% of the value of properties pledged, so that there may be an adequate margin of safety in the event of business failure and the need to apply the security to the payment of the indebtedness.

The ratio of plant and equipment to long-term debt for the Marshall Company follows:

	<u>1952</u>	<u>1953</u>
Total plant and equipment (net) . . . . .	\$875,000	\$775,000
Total long-term debt . . . . .	\$400,000	\$400,000
Ratio of plant and equipment to long-term debt . . . . .	2.2:1	1.9:1

**RATIO OF OWNERS' CAPITAL TO PLANT AND EQUIPMENT**

The changes in the relationship of owners' capital to plant and equipment need to be considered in judging whether expansion is

taking place through an increased ownership equity or through creditor sources. An increasing ratio indicates that plant and equipment is being increasingly financed through funds supplied by the sale of stock or the retention of earnings within the business, and normally this would

be looked upon favorably. A declining ratio indicates that the increase of plant properties has exceeded the expansion in capital. This may suggest possible overexpansion, the excessive use of credit supplied by the creditor group, and greater vulnerability to financial difficulties in the event of a decline in business activities.

The ratio of capital to plant and equipment for the Marshall Company follows:

	1952	1953
Total capital .....	\$1,445,000	\$1,468,000
Total plant and equipment (net) .....	\$ 875,000	\$ 775,000
Ratio of capital to plant and equipment . . . .	1.7:1	1.9:1

**BOOK VALUES PER SHARE OF STOCK**

An important measurement of the owners' interest in the business is afforded by a determination of the *book value per share*. This is the dollar equity related to each share. The calculation of share book value was described earlier in Chapter 23. It was indicated there that, when there is only one class of stock, book value per share is calculated by dividing the total capital by the number of shares outstanding. When both common and preferred stock have been issued, it becomes necessary to allocate surplus to the two classes. Redemption or liquidation values and cumulative and participating features of the preferred issue must be considered in determining the surplus relating to preferred stock and the balance relating to the residual or common stock equity.

Both common and preferred stock of the Marshall Company are \$10 par. The preferred stock is cumulative and nonparticipating, and no dividends are in arrears. The preferred stock has a liquidation value equal to its par value. The book values per share for common and preferred stock are calculated as follows:

	<u>1952</u>	<u>1953</u>
6% preferred stock.	\$350,000	\$350,000
Common stock.....	\$750,000	\$750,000
Paid-in surplus.....	\$100,000	\$100,000
Earned surplus...	\$245,000	\$268,000
Book value per share of preferred:	$\frac{\$350,000}{35,000 \text{ shares}} = \$10.00$	$\frac{\$350,000}{35,000 \text{ shares}} = \$10.00$
Book value per share of common:	$\frac{\$750,000 + \$345,000}{75,000 \text{ shares}} = \$14.60$	$\frac{\$750,000 + \$368,000}{75,000 \text{ shares}} = \$14.91$

Frequently, for analysis purposes, the book value of stock is calculated after the surplus is reduced by the amount of intangibles reported in the asset section of the balance sheet. Book value of the stock thus reported offers a more conservative appraisal of the ownership equity.

**OTHER MEASUREMENTS  
OF BALANCE SHEET  
STRUCTURE**

A number of measurements of balance sheet structure other than those already described are developed in specific instances. Among these might be mentioned the ratio of individual noncurrent assets to total assets of the business or to total assets of the group, and individual noncurrent liabilities to total liabilities of the business or to total liabilities of the group. Relationships such as the foregoing may be presented directly on comparative statements by means of vertical analysis procedures.

**RATIO OF SALES  
TO ASSETS**

Among the measurements that are developed from balance sheet and income statement data may be mentioned the *ratio of sales to assets*, sometimes called the *assets turnover rate*, which measures the contribution of assets to the sales total. This ratio is calculated by dividing the net sales figure by the business assets that produced the sales. Comparative data reporting the ratio of sales dollars to the asset dollar investment indicates the relative effectiveness of asset utilization. A ratio increase may suggest the better utilization of assets, although a point may be reached where it is concluded that there is a strain on assets and the investment is insufficient for the company to reach its full sales potential. A ratio decrease may indicate that sales are not keeping pace with asset changes, thus suggesting the possibility of overinvestment in assets or their inefficient use.

In developing the ratio, long-term investments should be excluded from the asset total, since these make no contribution to the sales total. If monthly figures for assets are available, they may be used in developing a representative average for assets employed during the year. Sometimes the assets at the end of the year are used as a basis for the computation. When sales can be expressed in terms of units sold, ratios in terms of sales units per dollar invested offer more reliable guides to interpretation than sales dollars, since unit results are not affected by price level fluctuations.

Assume that only asset totals for the beginning and end of the year are available for the Marshall Company and that sales cannot be expressed in terms of units. Ratios are computed as follows:

	<u>1952</u>	<u>1953</u>
Net sales.....	\$1,650,000	\$1,425,000
Net assets (excluding long-term investments):		
Beginning of year .....	\$1,510,000	\$1,991,000
End of year .....	\$1,991,000	\$1,778,000
Average assets for the year.....	\$1,750,500	\$1,884,500
Ratio of sales to assets.....	.9:1	.8:1

### **RATIO OF SALES TO PLANT AND EQUIPMENT**

Related to the ratio just described is the *ratio of sales to plant and equipment*, sometimes referred to as the *plant and equipment turnover* or the *fixed asset turnover*. The sales total, here, is divided by the investment in plant and equipment, and the resulting figure indicates how effectively plant and equipment is utilized in terms of sales. With comparative data, judgments may be made concerning the relative efficiency of utilization of these assets and the effects of increases or decreases in property on sales. An increase in plant and equipment when accompanied by a ratio decrease may suggest over-expansion in plant facilities.

Assume that beginning and ending plant and equipment balances are used in measuring the average investment for the Marshall Company. Ratios are computed as follows:

	<u>1952</u>	<u>1953</u>
Net sales.....	\$1,650,000	\$1,425,000
Plant and equipment:		
Beginning of year .....	\$ 675,000	\$ 875,000
End of year .....	\$ 875,000	\$ 775,000
Average investment in plant and equipment .	\$ 775,000	\$ 825,000
Ratio of sales to plant and equipment . . . .	2.1:1	1.7:1

In certain instances it may be desirable to combine intangible assets with plant and equipment in establishing the base for this measurement.

### **RATE EARNED ON TOTAL ASSETS**

The adequacy of net income may be measured in terms of (1) the return on sales, (2) the return on assets producing the income, and (3) the return on the owners' equity in the business. There should be an adequate return in terms of each of the three standards if operating results are to be viewed as wholly favorable. The return on sales was measured in the previous chapter where vertical analysis was applied to income statement data. The return on total assets, frequently referred to as the *asset productivity rate*, is found by dividing the net income by the total assets em-

ployed in the production of such income. Net income represents the income transferred to earned surplus after income taxes.

If the assets by months are available, they should be used in developing the average assets for the year. Frequently, however, the assets at the beginning of the year or the assets at the end of the year are used for the calculation. In some instances it may be desirable to exclude certain income items relating to investments, such as sinking fund income, dividends from subsidiaries, and rental income on properties, so that net income is limited to that resulting from trading operations. When this is the case, assets should be reduced by the investments in developing the income to assets percentage. Sometimes the rate of net operating income to total assets, or, perhaps, the rate of net income before income taxes to total assets, is developed in comparative form so that rates may not be affected by financial management items or by taxes based upon operating results.

The rate of net income after income taxes on total assets for the Marshall Company is determined below:

	1952	1953
Net income. . . . .	\$ 60,000	\$ 70,000
Total assets:		
Beginning of year. . . . .	\$1,760,000	\$2,391,000
End of year. . . . .	\$2,391,000	\$2,278,000
Average assets. . . . .	\$2,075,500	\$2,334,500
Rate earned on total assets. . . . .	2.89%	3.00%

**RATE EARNED ON  
TOTAL OWNERS'  
CAPITAL**

The return on the owners' equity in the business is found by dividing the net income by the total capital. In the development of this rate, it is preferable to use the average capital for a year calculated from monthly data, particularly when significant changes in capital have occurred during the year as a result of the sale of additional stock, the retirement of stock, the payment of dividends, and the retention of earnings. Sometimes the beginning or the ending capital is used for the measurement.

The rate of net income on total capital for the Marshall Company is calculated as follows:

	1952	1953
Net income. . . . .	\$ 60,000	\$ 70,000
Capital:		
Beginning of year . . . . .	\$1,330,000	\$1,445,000
End of year. . . . .	\$1,445,000	\$1,468,000
Average capital. . . . .	\$1,387,500	\$1,456,500
Rate earned on capital. . . . .	4.32%	4.81%

**TIMES BOND INTEREST REQUIREMENTS WERE EARNED**

Net income also may be measured in terms of (1) its relationship to bond interest requirements, (2) its relationship to preferred dividend requirements, and (3) its availability to common stockholders.

Calculation of the number of times earnings cover the bond interest is made by dividing net income before any charge for interest by the bond interest requirements for the period. The ability of the company to meet interest payments and the degree of safety afforded the bondholders is thus reported. The number of times interest charges were earned by the Marshall Company follows:

	1952	1953
Net income	\$ 60,000	\$ 70,000
Add bond interest ( $4\frac{1}{2}\%$ on long-term debt)	18,000	18,000
	<hr/>	<hr/>
Amount available in meeting interest requirements	\$ 78,000	\$ 88,000
	<hr/>	<hr/>
Number of times bond interest requirements were earned	4.3	4.9

**TIMES PREFERRED DIVIDEND REQUIREMENTS WERE EARNED**

Calculation of the number of times earnings cover the preferred dividends is made by dividing the net income by the preferred dividend requirements for the period. The ability of the company to meet dividend requirements on preferred is thus indicated. For the Marshall Company calculations are as follows:

	1952	1953
Net income -- amount available in meeting preferred dividend requirements	\$ 60,000	\$ 70,000
Preferred dividend requirements	\$ 21,000	\$ 21,000
Number of times preferred dividend requirements were earned	2.9	3.3

Frequently net income is expressed in terms of earnings per share on preferred stock. Net income divided by the number of shares of preferred stock outstanding gives the number of dollars earned per share of preferred stock. It should be recognized that this amount does not represent the earnings to which preferred stock is entitled, but simply the margin of safety of actual earnings as compared with the required amount.

Earnings on preferred shares for the Marshall Company are expressed as follows:

	<u>1952</u>	<u>1953</u>
Net income — amount available in meeting preferred dividend requirements . . . . .	\$60,000	\$70,000
Number of shares of preferred outstanding . . . . .	35,000	35,000
Earnings per share on preferred stock . . . . .	\$1.71	\$2.00

Since preferred stock is 6%, \$10 par, earnings required to cover preferred dividends would be 60 cents per share.

### RATE EARNED ON COMMON EQUITY

The rate of earnings on the common stockholders' equity, sometimes referred to as the *financial ratio*, is calculated by dividing the net income after preferred dividend requirements by the equity of the common stockholders. The average equity for common stockholders should be determined, although the rate is frequently calculated on the basis of the beginning or ending common equity.

In the case of the Marshall Company, whose preferred stock is non-participating, preferred requirements are limited to 6%. The rate earned on the common equity, then, is calculated as follows:

	<u>1952</u>	<u>1953</u>
Net income . . . . .	\$ 60,000	\$ 70,000
Dividend requirements on preferred stock . . . . .	\$ 21,000	\$ 21,000
Income identified with common stockholders' equity . . . . .	\$ 39,000	\$ 49,000
Common stockholders' equity:		
Beginning of year . . . . .	\$1,080,000	\$1,095,000
End of year . . . . .	\$1,095,000	\$1,118,000
Average common equity . . . . .	\$1,087,500	\$1,106,500
Rate earned on common stockholders' equity	3.6%	4.4%

### EARNINGS PER SHARE ON COMMON

Earnings on common may be expressed in terms of the dollar amount relating to each share. In computing common share earnings, net income reduced by the prior claim on earnings of preferred stock is divided by the number of shares of common stock outstanding. In the case of the Marshall Company, earnings per share on common stock are computed as follows:

	<u>1952</u>	<u>1953</u>
Net income . . . . .	\$60,000	\$70,000
Dividend requirements on preferred stock . . . . .	21,000	21,000
Income identified with common stock equity . . . . .	\$39,000	\$49,000
Number of shares of common stock outstanding . . . . .	75,000	75,000
Earnings per share on common stock . . . . .	\$ .52	\$ .65

### DISTRIBUTION OF EARNINGS TO CREDITOR AND OWNERSHIP EQUITIES

Inasmuch as earnings are the ultimate source upon which the creditors and the owners of an enterprise must rely for a return of both principal and income, and because the different classes of security holders normally obtain different rates of return, a percentage analysis of the disposition of the earnings of a company is frequently of interest to all groups. In the case of the Marshall Company it is possible to prepare a summary of the distribution of earnings as follows:

	EQUITY TOTALS <sup>1</sup>		EQUITY PERCENTAGE <sup>1</sup>		AMOUNT OF EARNINGS PAID AND ACCRUING* TO EQUITIES		PERCENTAGE DISTRIBUTION OF TOTAL EARNINGS PAID OR ACCRUING*		PERCENTAGE PAID OR ACCRUING* TO EQUITIES	
	1952	1953	1952	1953	1952	1953	1952	1953	1952	1953
Bondholders (4½% long-term debt) . . . . .	\$ 400,000	\$ 400,000	22%	22%	\$18,000	\$18,000	23%	20%	4 5%	4 5%
Preferred stockholders . .	350,000	350,000	19%	19%	21,000	21,000	27%	24%	6 0%	6 0%
Common stockholders . . .	1,087,500	1,106,500	59%	59%	24,000	26,000	31%	30%	2 2%	2 3%
					\$15,000*	\$23,000*	19%*	20%*	1 4%*	2 1%
Total . . . . .	\$1,837,500	\$1,856,500	100%	100%	\$78,000	\$88,000	100%	100%	4 2%	

### OTHER MEASUREMENTS OF OPERATIONS

A number of other measurements of operations and operating results that are significant in various instances can be developed. Among these may be mentioned such ratios as gross profit to sales, net operating income to sales, net income to sales, individual manufacturing expenses to cost of goods manufactured, individual selling expenses and individual general and administrative expenses to the totals for these respective groups. These relationships are generally presented by means of comparative statements offering horizontal and vertical analyses of profit and loss data.

### INTERPRETATION OF ANALYSES

Analyses introduced in Chapter 26 and in this chapter are developed to help the analyst arrive at certain conclusions with regard to the business. It has already been suggested that these are merely guides to the intelligent interpretation of financial data.

All of the ratios and measurements need not be used, but rather only those that will actually assist in the development of opinions with respect to the questions that have been raised by the analyst. Such measurements as are developed need to be interpreted in terms of the conditions relating to the particular enterprise, the conditions relating to the particular industry to which the enterprise is related, and the conditions relating to general business and the economic

<sup>1</sup>Average equities for the year are indicated in this illustration. It would be possible to base analyses on equities as of the beginning of the year or equities as of the end of the year.

\*This percentage, while stated in terms of the common stockholders' equity, could be stated in terms of the par or stated value of the common stock.

environment within which the enterprise operates. If measurements are to be of maximum value, they need to be compared with similar data developed for the particular enterprise for past periods, with similar measurements that may be available for the industry as a whole and that may be regarded as standard or normal, and with pertinent data relating to general business conditions and the business cycle as these affect the individual enterprise. Only by intelligent use and integration of the foregoing sources of data can financial maladjustments be recognized and reliable opinions be developed concerning operation, progress, and financial structure of the business unit.

### QUESTIONS

1. (a) Define working capital. (b) What is the importance of working capital?
2. Distinguish between the current ratio and the acid-test ratio. What are usually considered minimums for each ratio?
3. The working capital for the Wright Company has increased in amount as follows. Comment on the change:

	1952	1953
Current assets:		
Cash	\$15,000	\$ 20,000
Receivables	32,000	40,000
Inventories	39,500	86,000
	<hr/> \$86,500	<hr/> \$146,000
Current liabilities	32,000	83,500
Working capital	<hr/> \$54,500	<hr/> \$ 62,500

4. Balance sheets for the Blake Corporation and the Carlson Corporation each show a working capital total of \$500,000. Does this indicate that the short-term solvencies of the two companies are approximately equal? Explain.
5. The current ratio for the Decker Co. is 4 to 1; the working capital ratio for the Evarts Co. is 9 to 1. The current position of the Evarts Co. may thus be considered the sounder of the two. Evaluate this argument.
6. Define each of the following: (a) banker's ratio, (b) quick assets, (c) financial ratio.
7. (a) How is the accounts receivable turnover calculated? (b) How would you interpret a rising accounts receivable turnover rate?
8. (a) How is the merchandise turnover calculated? (b) What precautions are necessary in arriving at the basis for the turnover calculation? (c) How would you interpret a rising merchandise turnover?

- 9.) (a) What is meant by "trading on the equity"? (b) Give figures to illustrate a gain accruing to owners through this practice.
10. "The ratio of owners' capital to total liabilities offers information concerning the long-term solvency of the business unit." Explain.
11. Give rules for calculating share book values when a company has both common and preferred shares outstanding.
12. State the significance of each of the following measurements: (a) ratio of plant and equipment to long-term debt, (b) ratio of owners' capital to plant and equipment, (c) ratio of sales to total assets, and (d) ratio of sales to plant and equipment.
13. (a) What is meant by the "asset productivity rate"? (b) How is it calculated?
14. Indicate how each of the following measurements is calculated and appraise its significance:
- The number of times bond interest requirements were earned.
  - The number of times preferred dividend requirements were earned.
  - The rate of earnings on the common equity.
  - The earnings per share on common stock.
15. (a) Distinguish between the "natural business year" and the "thirteen-month year." (b) What advantages are found in the adoption of each plan?

### EXERCISES

1. The data that follow are taken from comparative balance sheets prepared for the Stanford Company:

	<u>1952</u>	<u>1953</u>
Cash	\$ 16,000	\$ 30,000
Marketable securities	20,000	10,000
Trade receivables (net)	45,000	55,000
Inventories	60,000	75,000
Prepaid expenses	1,500	2,500
Plant and equipment	80,000	85,000
Intangibles	25,000	22,500
Deferred charges	5,000	6,000
	<b>\$252,500</b>	<b>\$286,000</b>
Current liabilities	<b>\$ 60,000</b>	<b>\$100,000</b>

- From the above data calculate for both 1952 and 1953: (1) the working capital, (2) the current ratio, (3) the acid-test ratio, (4) the ratio of current assets to total assets, (5) the ratio of cash to current liabilities.
- Evaluate each of the above changes.

## 2. Statements for the Hancock Co. show the following balances:

	<u>1952</u>	<u>1953</u>	<u>1954</u>
Average receivables (net).....	\$ 30,000	\$ 40,000	\$ 60,000
Net sales.....	345,000	390,000	480,000

Give any significant measurements that may be developed in analyzing the foregoing, assuming a 300-day business year. What conclusions may be made concerning receivables, assuming that approximately one third of the sales are for cash and sales on account are made on a 2/30, n/60 basis?

3. The average inventory for the ABC Company at cost price is \$40,000; sales for 1953 were made at 20% above cost and totaled \$300,000. (a) What was the merchandise turnover rate? (b) What is the average age of the inventory on hand, assuming a 300-day year?

## 4. Operating statements for the Merriman Sales Co. show the following:

	<u>1952</u>	<u>1953</u>	<u>1954</u>
Sales.....	\$75,000	\$96,000	\$105,000
Cost of goods sold:			
Beginning inventory.....	\$16,000	\$15,000	\$ 29,000
Purchases.....	50,000	80,000	86,000
	<u>\$66,000</u>	<u>\$95,000</u>	<u>\$115,000</u>
Ending inventory.....	15,000	29,000	41,000
	<u>\$51,000</u>	<u>\$66,000</u>	<u>\$ 74,000</u>
Gross profit.....	\$24,000	\$30,000	\$ 31,000

Give whatever measurements may be developed in analyzing the inventory positions at the end of each year. What conclusions would you make concerning the inventory trend?

5. The following data are taken from the Mason Corporation records for years ending December 31, 1951, 1952, and 1953:

	<u>1951</u>	<u>1952</u>	<u>1953</u>
Finished goods inventory.....	\$ 15,000	\$ 30,000	\$ 60,000
Goods in process inventory.....	40,000	40,000	40,000
Raw materials inventory.....	25,000	40,000	50,000
Sales.....	360,000	340,000	400,000
Cost of goods sold.....	210,000	235,000	230,000
Cost of goods manufactured.....	200,000	250,000	260,000
Cost of materials used.....	120,000	130,000	150,000

Calculate turnover figures for 1952 and 1953 for (a) raw materials, (b) goods in process, and (c) finished goods.

6. The total purchases of goods by the Bailey Wholesale Company during 1953 was \$360,000. All purchases were on a 2/10, n/30 basis. The average balance in the vouchers payable account was \$45,000. Was the company prompt, slow, or average in paying for goods? How many days' average purchases were there in accounts payable, assuming a 300-day year?

7. The capital for the Mathews Corporation on December 31, 1953, is as follows:

6% Preferred stock, \$50 par.....	\$ 500,000
Common stock, \$10 par.....	1,000,000
Paid-in surplus.....	200,000
Earned surplus.....	100,000
	<u>\$1,800,000</u>

What is the book value per share for both preferred and common stock, assuming each of the following conditions:

- Preferred stock is cumulative and nonparticipating, with no dividends in arrears.
- Preferred stock is cumulative and nonparticipating, and dividends are in arrears since January 1, 1952.
- Preferred stock is cumulative and fully participating, with no dividend arrearages.
- Preferred stock is cumulative and fully participating, and dividends are in arrears since January 1, 1952.

8. The balance sheets for the Keller Company showed the following equities at the end of each year:

	<u>1952</u>	<u>1953</u>
4% Bonds payable.....	\$ 500,000	\$ 500,000
6% Nonparticipating preferred stock, \$100 par.....	500,000	600,000
Common stock, \$25 par.....	1,000,000	1,200,000
Paid-in and earned surplus.....	300,000	400,000

Net income after income taxes was: 1952, \$60,000; 1953, \$105,000. Using the foregoing data, calculate for each year:

- The rate of earnings on total capital at the end of the year.
- The number of times bond interest requirements were earned.
- The number of times preferred dividend requirements were earned.
- The rate earned on the common stockholders' equity.
- The dollar earnings per share of common stock,

## PROBLEMS

~~27-1.~~ The balance sheet data for the Gardner Corporation on December 31, 1953, appear below:

GARDNER CORPORATION  
BALANCE SHEET  
DECEMBER 31, 1953

ASSETS		LIABILITIES AND CAPITAL	
Cash	\$ 45,000	Notes and accounts payable	\$ 70,000
Marketable securities	175,000	Income taxes payable	15,000
Notes and accounts receivable (net)	180,000	Accrued wages, interest	10,000
Inventories	300,000	Dividends payable (cash)	5,000
Prepaid expenses	15,000	Bonds payable	400,000
Bond sinking fund (securities of other companies)	150,000	Deferred credits	10,000
Plant and equipment	930,000	Common stock, \$20 par	1,900,000
Intangible assets	200,000	Preferred stock, \$10 par (non-participating, noncumulative)	200,000
Unamortized bond discount and expense	5,000	Earned surplus	140,000
	\$2,000,000	Reserve for contingencies	150,000
			\$2,000,000

*Instructions:* From the foregoing, calculate the following:

- The amount of working capital.
- The current ratio.
- The acid-test ratio.
- The ratio of current assets to total assets.
- The ratio of total capital to liabilities.
- The ratio of plant and equipment to bonds.
- The book value per share of preferred stock.
- The book value per share of common stock.

~~27-2.~~ Comparative data for the Winter Heating Co for the three-year period 1951-1953 are presented below and on the following page:

INCOME STATEMENT DATA

	1951	1952	1953
Net sales	\$ 800,000	\$1,000,000	\$1,200,000
Cost of goods sold	500,000	660,000	760,000
Gross profit	\$ 300,000	\$ 340,000	\$ 440,000
Selling, general, and other expenses	280,000	300,000	350,000
Net income from operations	\$ 20,000	\$ 40,000	\$ 90,000
Federal income taxes	5,000	15,000	35,000
Net income after federal income taxes	\$ 15,000	\$ 25,000	\$ 55,000
Dividends paid	15,000	30,000	40,000
Net increase or decrease* in earned surplus	—	\$ 5,000*	15,000

## BALANCE SHEET DATA

	<u>1951</u>	<u>1952</u>	<u>1953</u>
<b>ASSETS</b>			
Cash . . . . .	\$ 50,000	\$ 35,000	\$ 55,000
Trade notes and accounts receivables (net)	245,000	320,000	400,000
Merchandise inventory (at cost) . .	320,000	380,000	420,000
Miscellaneous current items . . .	20,000	10,000	30,000
Plant and equipment (net)	650,000	600,000	680,000
Intangibles	100,000	100,000	100,000
Miscellaneous long-term deferrals	5,000	5,000	15,000
	<u>\$1,390,000</u>	<u>\$1,450,000</u>	<u>\$1,700,000</u>
<b>LIABILITIES AND CAPITAL</b>			
Trade notes and accounts payable	\$ 130,000	\$ 165,000	\$ 205,000
Wages, interest, dividends payable	15,000	25,000	45,000
Federal income taxes payable	5,000	15,000	35,000
Miscellaneous current items	10,000	15,000	10,000
5% bonds payable . . . . .	300,000	300,000	300,000
Deferred credits . . . . .	5,000	10,000	10,000
6% preferred stock, nonparticipating, \$100 par	200,000	200,000	200,000
No-par common stock, \$10 stated value	400,000	400,000	500,000
Paid-in surplus	200,000	200,000	260,000
Earned surplus — free.	65,000	60,000	55,000
Earned surplus — appropriated	60,000	60,000	80,000
	<u>\$1,390,000</u>	<u>\$1,450,000</u>	<u>\$1,700,000</u>

*Instructions:* From the foregoing data, calculate the following comparative structural measurements for 1952 and 1953 as follows:

- The amount of working capital.
- The current ratio.
- The acid-test ratio.
- The trade receivables turnover rate.
- The average days' sales in receivables at the end of the period (assume a 300-day business year).
- The trade payables turnover rate.
- The average days' purchases in payables at the end of the period.
- The merchandise turnover rate.
- The number of days' sales in the inventory at the end of the period.
- The ratio of total capital to total liabilities.
- The ratio of plant and equipment to bonds payable.
- The ratio of capital to plant and equipment.
- The book value per share of preferred stock.
- The book value per share of common stock.

**27-3.** Using the comparative data for the Winter Heating Co. (Problem 27-2), calculate the comparative operating measurements for 1952 and 1953 as follows:

- (a) The ratio of sales to total assets.
- (b) The ratio of sales to plant and equipment.
- (c) The rate earned on net sales.
- (d) The gross profit rate on net sales.
- (e) The rate earned on total assets.
- (f) The rate earned on total capital.
- (g) The number of times bond interest requirements were earned.
- (h) The number of times preferred dividend requirements were earned.
- (i) The rate earned on the common stockholders' equity.
- (j) The earnings per share on common stock.

**27-4.** Using the comparative data for the Winter Heating Co. as given in Problem 27-2, prepare a summary of the distribution of earnings for the three-year period similar to that illustrated on page 842. Measurements are to be based on equity totals as of the end of each year.

**27-5.** Using the data for the Stanfield Manufacturing Co. as given in Problem 26-3 on pages 819-821, calculate comparative structural measurements for 1952 and 1953 as follows:

- (a) The amount of working capital.
- (b) The current ratio.
- (c) The acid-test ratio.
- (d) The current asset turnover rate.
- (e) The finished goods inventory turnover rate.
- (f) The raw materials inventory turnover rate.
- (g) The number of days' sales in the average finished goods inventory (assume a 300-day business year).
- (h) The number of days' raw materials requirements in the average raw materials inventory.
- (i) The ratio of total capital to total liabilities.
- (j) The ratio of plant and equipment to the long-term debt.
- (k) The book value per share of the preferred stock.
- (l) The book value per share of the common stock.

**27-6.** Using the data for the Stanfield Manufacturing Co. as given in Problem 26-3 on pages 819-821, calculate comparative operating measurements for 1952 and 1953 as follows:

- (a) The ratio of sales to total assets.
- (b) The ratio of sales to plant and equipment.
- (c) The rate earned on net sales.
- (d) The gross profit rate on net sales.
- (e) The rate earned on total assets.
- (f) The rate earned on total capital.
- (g) The number of times long-term debt interest requirements were earned.
- (h) The number of times preferred dividend requirements were earned.
- (i) The rate earned on the common stockholders' equity.
- (j) The earnings per share on common stock.

**27-7.** Using the comparative data for the Stanfield Manufacturing Co. as given in Problem 26-3, pages 819–821, prepare a summary of the distribution of earnings for 1952 and 1953 similar to that illustrated on page 842. Measurements are to be based on equity totals as of the end of each year.

**27-8.** Inventory and receivable balances and also gross profit data for the Allen Company appear below:

BALANCE SHEET DATA:	1951	1952	1953
Merchandise inventory, December 31 . . . .	\$ 40,000	\$ 50,000	\$80,000
Trade receivables, December 31 . . . . .	30,000	35,000	50,000
PROFIT AND LOSS DATA:			
Net sales . . . . .	\$210,000	\$270,000	\$300,000
Cost of sales . . . . .	150,000	200,000	230,000
Gross profit on sales . . . . .	\$ 60,000	\$ 70,000	\$ 70,000

*Instructions:* Assuming a 300-day business year, calculate the following measurements for 1952 and 1953:

- The trade receivable turnover rate.
- The average days' sales in receivables at the end of the period.
- The merchandise turnover rate.
- The number of days' sales in the inventory at the end of the period.

**27-9.** Capital accounts for Hamilton, Inc. at the end of 1952 and 1953 follow:

	1952	1953
6% Pref. stock, par and liquidating value \$50..	\$100,000	\$100,000
Common stock, \$10 par . . . . .	250,000	350,000
Paid-in surplus . . . . .	400,000	500,000
Earned surplus . . . . .	20,000	60,000

What is the book value of both common and preferred stock at the end of 1952 and at the end of 1953, assuming each of the conditions below:

- Preferred is cumulative and nonparticipating; dividend requirements have been met on preferred annually.
- Preferred is cumulative and nonparticipating; the last dividend on preferred stock was paid for the year 1950.
- Preferred is cumulative and fully participating; dividend requirements have been met on preferred annually.
- Preferred is cumulative and fully participating; the last dividend on preferred stock was paid for the year 1950.

## Statement of Application of Funds

### **NATURE AND PURPOSE OF THE STATEMENT OF APPLICATION OF FUNDS**

The periodic statements and analytical summaries illustrated in the previous chapters may be supplemented by a special report that summarizes the flow of working capital through the business during the fiscal period. This report is known as the *statement of application of funds*, also variously called the *funds statement*, the *source and application of funds statement*, the *statement of financial benefits earned and employed*, the *statement of financial changes*, and the *where-got, where-gone statement*.

Changes in working capital position of a business unit are significant considerations in the analysis of operating results and financial condition. The company's transactions making working capital available, the disposition of available working capital, and the composition of the working capital at the end of the period, are all important factors in appraising past activities and in judging a company's ability to prosper in the future.

While comparative balance sheets offer important data concerning net changes in working capital items, together with other asset, liability, and capital items, the comparative data fail to show what resources were made available to the business during the period and how such resources were employed. For example, assume that an increased working capital has resulted from profitable operations. This will not be apparent from an inspection of comparative earned surplus figures where the ending balance results from such various factors as profits, dividends, corrections in profits and losses of prior periods, and surplus appropriations. Or assume that working capital has been applied to the purchase of plant and equipment. This cannot be determined from an inspection of comparative plant and equipment balances where the ending balance results from such various transactions as plant and equipment purchases, sales, trade-ins, write-offs against depreciation allowances, and revaluations.

The statement of application of funds adopts a broader scope than the statement of cash receipts and disbursements. The latter statement shows the movement of cash, summarizing the sources of cash receipts and the nature of cash disbursements. Organizations whose activities

center about cash, such as charitable organizations, professional societies, fraternal organizations, and governmental units, require statements summarizing the movement of cash. The statement of cash receipts and disbursements occupies a significant position in reporting past activities; cash forecasts and budgets are important instruments in the control and utilization of cash in the future. As mentioned earlier in the text, the business unit is also concerned with the movement of cash and cash planning. But the business unit is also vitally concerned with a broader and more comprehensive matter — the movement of current resources as a whole — cash and marketable securities, receivables, and inventories, less those items making a claim against current assets. While similar in nature and function to the statement of cash receipts and disbursements, the statement of application summarizes the flow of current resources; working capital and not cash occupies the focal position. This statement offers an understanding of the factors affecting working capital in the past; it may be used as an instrument for working capital control and direction in the future.

The statement of application of funds summarizes both the sources of working capital and the uses made of working capital during the period. This information is presented as support for the change that took place in working capital from its balance at the beginning of the period to the amount reported at the end of the period. The flow of working capital and the effects of this flow on the working capital balance are illustrated in the summary below:

WORKING CAPITAL, JANUARY 1		\$500,000	
<i>Funds provided (Sources of working capital during the year):</i>		<i>Funds applied (Applications of working capital during the year):</i>	
From sale of noncurrent assets	\$ 20,000	\$120,000	To purchase of noncurrent assets
From borrowing on non-current obligations	100,000	50,000	To payment of noncurrent obligations
From sale of additional capital stock	150,000	10,000	To purchase and retirement of own capital stock
From profitable operations	30,000	20,000	To payment of dividends
	<u>\$300,000</u>		<u>\$200,000</u>
		+ 300,000	
		- 200,000	
WORKING CAPITAL, DECEMBER 31		<u>\$600,000</u>	

The summary shows \$300,000 in working capital made available and \$200,000 of available working capital consumed during the year, resulting in an increase in the business unit's working capital position from \$500,000 to \$600,000.

The funds statement is normally prepared in two parts. In the first part the net change in working capital for the period is summarized. Here individual sources of working capital are listed under the heading "Funds Provided" and individual dispositions of working capital are listed under the heading "Funds Applied." The difference between funds provided and funds applied is reported as the net increase or decrease in working capital for the period. The second part of the statement, which may be prepared as a second section on the statement or in the form of a separate supporting schedule, offers a listing of the individual working capital items both at the beginning and the end of the period, together with the net change in each item. Thus the net increase or decrease that has taken place in the business unit's working capital as summarized in the first part of the statement is supported here in terms of the separate working capital items and their individual changes.

The statement of application of funds offers the answers to questions asked by management and owners, such as: "What is responsible for the change in our working capital position?" "How have our profits been employed?" "How have we used funds raised through long-term borrowing and the sale of stock?" "What did we get from the sale of securities?" "How much did we invest in plant and equipment?" These are important questions that receive their full answer only through the preparation of this statement.

#### PREPARATION OF THE STATEMENT OF APPLI- CATION OF FUNDS

The statement of application of funds is prepared from comparative balance sheet data supplemented by an explanation of the account changes for all noncurrent and capital items. This information is analyzed in developing the explanations for the sources and applications of working capital. To illustrate the process of analysis and the development of the statement, assume the following balance sheet information at the beginning and the end of the fiscal year for the Austin Manufacturing Company.

ASSETS	DEC. 31 1952	DEC. 31 1953	LIABILITIES AND CAPITAL	DEC. 31 1952	DEC. 31 1953
Cash	\$ 90,000	\$ 60,000	Notes Payable	\$ 20,000	\$ 30,000
Accounts Receivable	110,000	120,000	Accounts Payable	140,000	120,000
Inventories	180,000	220,000	Bonds Payable	50,000	
Land	50,000	50,000	Capital Stock	200,000	350,000
Buildings and Equipment		120,000	Earned Surplus	20,000	70,000
	<u>\$430,000</u>	<u>\$570,000</u>		<u>\$430,000</u>	<u>\$570,000</u>

An investigation of balance sheet changes reveals that expenditures of \$120,000 were made for buildings and equipment during the year, and \$50,000 was applied to the retirement of bonds. In making these expenditures, working capital was made available in part by the issuance of capital stock of \$150,000. Earned surplus was affected only by net income for the year. When operations are profitable, sales that produce cash and receivables exceed cost of sales and expenses that involve reductions in cash and inventories and the increase in payables; hence, profitable operations are a source of working capital. In the example, profitable operations reflected in the increased earned surplus balance made available additional working capital of \$50,000. A portion of the funds from profitable operations was used in the acquisition of buildings and equipment and the retirement of bonds, and the balance was used for the improvement of the working capital position of the business. A statement reporting the sources and applications of funds together with the nature of the changes in working capital is given below:

### AUSTIN MANUFACTURING COMPANY

#### STATEMENT OF APPLICATION OF FUNDS

FOR YEAR ENDED DECEMBER 31, 1953

Funds were provided by:		
Profitable operations	\$ 50,000	
Issuance of capital stock	<u>150,000</u>	\$200,000
Funds were applied to:		
Purchases of buildings and equipment	\$120,000	
Retirement of bonds	<u>50,000</u>	<u>170,000</u>
Increase in working capital		<u>\$ 30,000</u>

The increase in working capital is accounted for as follows:

WORKING CAPITAL ITEMS	DEC 31 1952	DEC. 31 1953	WORKING CAPITAL	
			INCREASE	DECREASE
Current assets:				
Cash	90,000	60,000		30,000
Accounts receivable	110,000	120,000	10,000	
Inventories	180,000	220,000	40,000	
Current liabilities:				
Notes payable	20,000	30,000		10,000
Accounts payable	140,000	120,000	20,000	
			<u>70,000</u>	<u>40,000</u>
Increases in working capital items				70,000
Decreases in working capital items				<u>40,000</u>
Increase in working capital				<u>30,000</u>

In the example given, no difficulty was found in the analysis of changes of balance sheet items and in the preparation of the statement directly from comparative balance sheets; in most instances, however, the use of working papers will facilitate the preparation of the statement. If working papers were to be prepared in the foregoing example, these would appear as shown on page 856.

In preparing working papers, balance sheet items are listed in the first pair of columns just as they appear on the comparative balance sheet. The net change in each account for the year appears in the second pair of columns. Increases in assets, decreases in liabilities, and decreases in capital balances are shown in the debit column, since the debits must have exceeded the credits to the accounts during the year; decreases in assets, increases in liabilities, and increases in capital balances are reported in the credit column, since in these instances the credits must have exceeded the debits. Change balances are now carried across to the last two pairs of columns. Debit excesses in non-current asset, noncurrent liability, or capital accounts are reported in the funds applied column; credit excesses in noncurrent asset, non-current liability, or capital accounts are reported in the funds provided column. Debit excesses in current asset and current liability items are reported in the working capital increase column; credit excesses in these are shown as working capital decreases. If funds provided by changes in noncurrent and capital items exceed the funds applied to such items, then working capital has gone up; if funds applied to non-current and capital items exceed funds provided through these sources, then working capital has gone down by the difference. The last two pairs of columns are brought into balance with a summary of the net effect of activities upon working capital.

**ANALYSIS OF  
ACCOUNT CHANGES  
IN PREPARATION OF  
FUNDS STATEMENT**

As previously explained, the preparation of the funds statement requires comparative balance sheet information supplemented by data explaining changes in noncurrent and

capital balances. The net change in an account balance cannot be relied upon to offer a full explanation of the effect of that item on working capital. To illustrate, assume that comparative balance sheets report a \$50,000 increase in bonds payable. Without further investigation, this might be interpreted as a source of funds of \$50,000; but reference to the bond account may disclose that bonds of \$150,000 were issued while bonds of \$100,000 were retired during the period. A further analysis of the transactions affecting the bond account may reveal that the bonds were issued at a discount of \$7,500, only \$142,500

AUSTIN MANUFACTURING COMPANY  
WORKING PAPERS FOR STATEMENT OF APPLICATION OF FUNDS  
FOR YEAR ENDED DECEMBER 31, 1953

ACCOUNTS	BALANCES		NET CHANGES		FUNDS		WORKING CAPITAL	
	DEC 31 1952	DEC 31 1953	DR	CR	APPLIED	PRO- VIDED	INCREASE	DECREASE
Cash	90,000	60,000		30,000			10,000	30,000
Accounts receivable	110,000	120,000	10,000				40,000	
Inventories	180,000	220,000	40,000					
Land	50,000	50,000						
Buildings and equipment		120,000	120,000		120,000			
	430,000	570,000						
Notes payable	20,000	30,000		10,000			20,000	10,000
Accounts payable	140,000	120,000	20,000					
Bonds payable	50,000		50,000		50,000			
Capital stock	200,000	350,000		150,000		150,000		
Surplus	20,000	70,000		50,000		50,000		
	430,000	570,000	240,000	240,000	170,000	200,000	70,000	40,000
Increase in working capital					30,000			30,000
					200,000	200,000	70,000	70,000

being received on the issue, while a call premium of \$2,000 was paid on bonds retired, resulting in an expenditure of \$102,000; in this instance, the statement should report funds provided by the issuance of bonds, \$142,500, and funds applied to bond retirement, \$102,000.

**SOURCES OF FUNDS** Decreases in noncurrent assets and increases in noncurrent liabilities and in capital items require analysis in determining and calculating funds provided; increases in noncurrent assets and decreases in noncurrent liabilities and in capital items require analysis in calculating funds applied. The following examples indicate sources of working capital and suggest the nature of the analysis that is necessary in determining the actual amount of funds provided.

(1) *Decreases in noncurrent asset accounts.* Balances in land, equipment, investment, and other noncurrent asset accounts may show decreases in amount as a result of sales of such items, thus representing sources of funds. An analysis of the transactions giving rise to account change is necessary, however, in calculating the amounts provided; disposal of investments at a profit, for example, provides funds greater in amount than indicated by the decrease in the asset account.

(2) *Increases in noncurrent liabilities.* Balances in long-term note, bond, and other noncurrent liability accounts may show increases as a result of amounts borrowed, thus representing fund sources. An analysis of the transactions giving rise to the account change is necessary; issuance of bonds at a discount, for example, provides funds less in amount than is indicated by the increase in the bond account.

(3) *Increases in capital.* The balance in the capital stock account may increase as a result of the issuance of stock, thus representing a source of funds. In determining the amount provided, however, the amount received for the stock must be determined because this may differ from the addition to the capital stock account. When the change in earned surplus has not resulted solely from the profit from operations for a period, an analysis of the earned surplus account is necessary. The increase in surplus from profits represents a source of funds. A decrease in surplus resulting from dividend distributions should be separately recognized as an application of funds.

**APPLICATIONS  
OF FUNDS**

The following examples indicate applications of working capital and suggest the nature of the analysis necessary in determining the actual amount of funds applied.

(1) *Increases in noncurrent assets.* Balances in land, buildings, patents, and other noncurrent asset accounts may show increases in amount as a result of the acquisitions of such items, thus representing fund applications. An analysis of transactions giving rise to the account change is necessary; the amount paid for patents, for example, may be greater than the increase in the patents account because of credits made to the account during the course of the period for patents cost amortization.

(2) *Decreases in noncurrent liabilities.* The balances in mortgage, bond, and other noncurrent liability accounts may show decreases resulting from retirement of obligations, thus representing fund applications. An analysis of transactions giving rise to the account change is necessary; the amount paid bondholders, for example, may exceed the decrease in the bonds account as a result of a call premium paid upon bond retirement.

(3) *Decreases in capital.* Capital stock outstanding may go down as a result of the acquisition of capital stock previously issued, thus representing fund applications. The amount paid for the stock reacquired must be determined, for this amount may differ from the reduction that is applied to the capital stock balance. When the change in earned surplus has not resulted solely from a loss from operations reported for a period, an analysis of the surplus account is necessary. The decrease in surplus resulting from an operating loss represents an application of funds. An additional decrease resulting from dividends should be separately recognized as an application of funds.

#### **ADJUSTMENTS IN DEVELOPING SOURCE AND APPLICATION AMOUNTS**

In the illustration of working papers on page 856, no adjustments were required in the account changes in reporting funds sources and applications, and changes were carried to the appropriate funds columns just as reported. The preceding discussion has indicated that the net change balances require adjustment when they do not report the actual amounts of funds provided or applied.

When adjustments are required, and this is usually the case, the statement should be prepared from working papers. Working papers should provide a pair of columns in which adjusting data may be recorded. Changes in account balances as revised by data in the adjustment columns are carried to the appropriate funds columns.

The adjustments that are made on the working papers fall under three headings:

(1) *Adjustments to cancel account changes that had no effect upon working capital.* Certain account changes may arise from entries that

are not related to fund movements. For example, properties may have been appraised and the appraisal changes may have been recorded in the accounts. Intangible assets may have been written off against surplus. An asset may have been improperly charged to expense in a previous period and, upon discovery of the error, the asset may have been charged and surplus credited. A stock dividend may have been issued, surplus being transferred to the capital stock account. The foregoing items, while resulting in changes in account balances, actually did not involve any changes in working capital. The changes in account balances are canceled on the working papers by adjustments that reverse the entries originally made, leaving only change balances that do explain the movement of funds.

(2) *Adjustments to report the individual sources and applications of working capital when several transactions are summarized in a single account.* The change in the balance of an account may be the result of several separate fund sources or applications or a combination of transactions representing both fund sources and applications. For example, the plant and equipment balance may reflect both the purchase of land and buildings and the trade of equipment. An investment account balance may reflect the effects of both investment acquisitions and disposals. Adjustments are made on the working papers so that the individual changes may be separately reported.

(3) *Adjustments to report a single source or application of working capital when this information is reported in two or more accounts.* The amount of funds provided or funds applied as a result of a certain transaction may be reflected in two or more accounts. For example, certain investments may have been sold for more than cost; the decrease in the investment balance and the related increase in surplus must be combined in arriving at funds provided from investment sale. Bonds may have been issued at a discount; the discount balance here must be applied against the bond account increase in arriving at the funds provided from the issue of bonds. Stock may have been retired at a premium; the decrease in the capital stock balance and the related decrease in surplus must be combined in arriving at the funds applied to stock retirement. Adjustments are made on the working papers so that related change balances may be summarized and expressed satisfactorily.

The earned surplus account offers an example of an account that may be affected by all three types of adjustments named. To illustrate, assume that an earned surplus balance shows an increase for a year of \$10,000. Inspection of the account discloses the following:

## EARNED SURPLUS

Mar. 1 Goodwill written off . . .	20,000	Dec. 1 Balance . . . . .	200,000
July 10 Cash dividends . . . . .	30,000	Dec. 31 Net profit for year . . . .	60,000

Goodwill was written off against Earned Surplus, both asset and surplus balances reporting reductions of \$20,000. Since the write-off had no effect upon funds, reductions in the account balances should be restored; the account changes from this action are thus canceled and will receive no further consideration in the development of the funds statement. Cash dividends of \$30,000 will have to be reported separately as an application of funds. This leaves \$60,000 as shown in the surplus account to be reported as a source of funds resulting from profitable operations.

The net income figure offers only a part of the story of funds made available if charges or credits recognized in the calculation of profit arose from book entries that had no effect upon funds. For example, assume that depreciation of \$15,000 was recorded in calculating profit for the year. The entry for depreciation, while increasing the allowance for depreciation account and representing a charge in the calculation of the net profit, had no effect upon funds in the current period; its effects upon the accounts should therefore be canceled. The funds resulting from profitable operations, then, consist of \$60,000, as reported, plus \$15,000, the charge against profit that required no current fund outlay. The purpose of this adjustment may be illustrated by the simple case that follows. Assume that comparative balance sheets for an attorney show the following:

	JANUARY 1	DECEMBER 31
Working capital . . . . .	\$2,000	\$ 8,000
Furniture and fixtures . . . . .	\$2,500	\$2,500
Less: Allowance for depreciation . .	1,000 1,500	1,500 1,000
Capital . . . . .	\$3,500	\$ 9,000

His income statement for the year reports the following:

Income from fees (received in cash or currently receivable) . . . . .		\$10,000
Less: Expenses (paid in cash or currently payable) . . .	\$4,000	
Depreciation . . . . .	500	4,500
Net profit for year . . . . .		\$ 5,500

Observe that, while the net profit for the period was \$5,500, working capital produced by operations was actually \$6,000 (\$10,000 less

\$4,000). A statement of application of funds, in this instance, would report funds of \$6,000 provided by operations and applied to the increase of working capital. Services produced working capital of \$10,000; this meant a profit of \$5,500 after the recapture of costs in the form of working capital outlays of \$4,000 and furniture and fixture depreciation of \$500. However, the working capital increase for the period was \$6,000, that is, the profit for the period, \$5,500, increased by a recovery of the cost sustained in the form of asset depreciation, \$500.

In calculating the funds provided by operations, adjustments raising income are required for all items that were charged against income but that did not require the outlay of funds in the current period. Net income would be increased for such items as depreciation and depletion on plant and equipment items and the amortization of patents, leaseholds, bond payable discounts, and bond investment premiums. Adjustments reducing income are required for all items that increased income but that did not provide working capital in the current period. Net income would be reduced for such items as the amortization of bond payable premiums and the accumulation of bond investment discounts.

#### ADJUSTMENTS ON WORKING PAPERS

The nature of the adjustments required on the working papers is illustrated in the example that follows. Comparative balance sheet data for the Kelly Trading Co. are reported below:

	DEC. 31, 1952	DEC. 31, 1953
Cash	\$ 20,000	\$ 15,000
Notes receivable	5,000	5,000
Accounts receivable	\$25,000	\$ 45,000
Less: Allowance for bad debts	1,500	2,000
	23,500	43,000
Inventories	20,000	51,500
Land	10,000	25,000
Buildings and equipment	\$60,000	\$105,000
Less: Allowance for depreciation	16,000	22,000
	44,000	83,000
Investment in Smith Co. stock (300 shares)	15,000	(200 shares) 10,000
Goodwill . . . . .	10,000	
	\$147,500	\$232,500
Notes payable	\$ 10,000	\$ 5,000
Accounts payable	15,000	25,000
Capital stock	100,000	150,000
Paid-in surplus	15,000	25,000
Appraisal surplus		15,000
Earned surplus	7,500	12,500
	\$147,500	\$232,500

The earned surplus account appears as follows:

EARNED SURPLUS			
Mar. 1	Cash dividends . . . . .	5,000	
July 1	Goodwill written off . . .	10,000	
Dec. 31 1953	Balance . . . . .		7,500
Dec. 31	Profit for year from profit and loss ac- count . . . . .		20,000

The income statement shows depreciation of \$6,000 on plant and equipment for the year and summarizes operations as follows:

Net income . . . . .	\$21,500
Less: Loss on sale of 100 shares of Smith Co. stock . . . . .	1,500
Increase in earned surplus for year . . . . .	<u>\$20,000</u>

Analysis of accounts and records reveals that \$60,000 was realized on the issue of additional stock, \$10,000 of the total being reported as paid-in surplus. Land, cost \$10,000, was appraised at \$25,000 and the appraisal increase was recorded. One hundred shares of Smith Co. stock, cost \$5,000, had been sold for \$3,500, which accounted for the loss of \$1,500 reported on the income statement.

Working papers for the statement of application of funds for the year ended December 31, 1953, are prepared as shown on page 863. It should be observed that the allowance for bad debts is subtracted from accounts receivable and the accounts are shown net on the working papers. Depreciation allowances are shown separately since these accounts require adjustment; instead of being reported as negative or credit balances in the debit section, however, it is more convenient to report these together with liability and capital items in the credit section.

After reporting account changes, adjustments are entered in the adjustment columns. Each adjustment is explained below:

(a) Analysis of the earned surplus account shows an increase from operations as reported by the income statement of \$20,000. The adjustment to remove earnings from Earned Surplus to a section that summarizes funds provided by operations is:

Earned Surplus . . . . .	20,000
Funds Provided by Operations: Profit per Income Statement . . . . .	<u>20,000</u>

"Funds Provided by Operations" is reported on a separate line below the comparative balance sheet detail. Since a number of adjustments to the profit figure may be required in completing the working

## STATEMENT OF APPLICATION OF FUNDS

Ch. 28]

**KELLY TRADING COMPANY**  
**WORKING PAPERS FOR STATEMENT OF APPLICATION OF FUNDS**  
**FOR YEAR ENDED DECEMBER 31, 1953**

ACCOUNTS	BALANCES		NET CHANGES		ADJUSTMENTS		FUNDS		WORKING CAPITAL	
	DEC 31 1952	DEC 31 1953	Dr.	Cr.	Dr.	Cr.	APPLIED	PROVIDED	INCREASE	DECREASE
Cash.....	20,000	10,000		5,000						5,000
Notes Receivable.....	5,000	5,000								
Accounts Receivable (net).....	23,500	43,000	19,500						19,500	
Inventories.....	20,000	51,500	31,500						31,500	
Land.....	10,000	25,000	15,000							
Buildings and Equipment.....	60,000	105,000	45,000							
Investment in Smith Co. Stock.....	15,000	10,000		5,000						
Goodwill.....	10,000			10,000						
	163,500	254,500								
Allowance for Depreciation—Plant and Equipment	16,000	22,000		6,000						
Notes Payable.....	10,000	5,000	5,000						5,000	
Accounts Payable.....	15,000	25,000		10,000						
Capital Stock.....	100,000	150,000		50,000						10,000
Paid-In Surplus.....	15,000	25,000		10,000						
Appraisal Surplus.....	7,500	15,000		15,000						
Earned Surplus.....	163,500	254,500		5,000						
			116,000	116,000						
Funds Provided by Operations:										
Profit per Income Statement.....								27,500		
Add: Depreciation.....										
Loss on Sale of Smith Co. Stock.....										
Funds Applied to Payment of Dividends.....										
Funds Provided by Issuance of Capital Stock.....										
Funds Provided by Sale of Smith Co. Stock.....										
Increase in Working Capital.....										
							121,000			
								121,000		
							50,000	91,000	56,000	15,000
							41,000			41,000
							91,000	91,000	56,000	56,000

papers, adequate space should be allowed after this line for such adjustments. Other adjustments not related to this section but requiring entries in the lower section of the working papers are reported below the space allotted for this summary.

(b) Analysis of the earned surplus account shows a charge for dividends. This information is to be reported separately as an application of funds. The charge is removed from Earned Surplus and is reported on a separate line below the space allotted for the adjustments to funds provided by operations. The entry for dividends on the work sheet is:

Funds Applied to Payment of Dividends.....	5,000	
Earned Surplus. . . . .		5,000

(c) The earned surplus account shows that goodwill of \$10,000 was written off. Since this action had no effect upon funds, changes in the accounts affected by the write-off are canceled by the following adjustment:

Goodwill.....	10,000	
Earned Surplus . . . . .		10,000

Debits to Earned Surplus of \$20,000 and credits of \$15,000, or net debit adjustments of \$5,000, cancel the increase of \$5,000 reported in the net changes credit column; all current earned surplus changes have been analyzed and fund information has been reported under appropriate headings.

(d) The change in the depreciation allowance account is canceled and Funds Provided by Operations is increased by the following adjustment:

Allowance for Depreciation — Plant and Equipment . .	6,000	
Funds Provided by Operations: Depreciation . . . .		6,000

(e) Capital Stock was increased \$50,000 and Paid-In Surplus was increased \$10,000 upon the sale of additional stock. In reporting a single source of funds through sale of stock, the following adjustment is made:

Capital Stock.....	50,000	
Paid-In Surplus.....	10,000	
Funds Provided by Issuance of Capital Stock....		60,000

Instead of transferring both balances to a new line in the lower section of the working papers, it would be possible to transfer the increase in paid-in surplus to the capital stock account. The capital stock account would then show a credit change of \$50,000 increased by an adjustment credit of \$10,000. The sum of the credits, \$60,000, would be carried to the funds provided column. While such a pro-

cedure may be followed in each instance where two or more balances account for a single source or application of funds, it is generally more satisfactory to transfer related balances to a separate line as illustrated so that adequate detail and explanation concerning the nature of the transaction can be offered.

(f) Thé revaluation of land had no effect upon funds, hence changes in the accounts resulting from the book entry are canceled by the following adjustment:

Appraisal Surplus . . . . .	15,000	
Land . . . . .		15,000

(g) The account Investment in Smith Co. Stock shows a decrease of \$5,000, and profits have been reduced by \$1,500 as a result of the sale of securities with a book value of \$5,000 for \$3,500. Since the net effect of the transaction was to provide funds of \$3,500, this is reported separately and both the change in the investment account and the charge against profits are canceled. This is accomplished by the following adjustment:

Investment in Smith Co. Stock . . . . .	5,000	
Funds Provided by Operations: Loss on Smith Co.		
Stock . . . . .		1,500
Funds Provided by Sale of Smith Co. Stock . . . . .		3,500

The foregoing procedure results in the following:

(1) Funds Provided by Operations, after adjustments, summarizes only those funds made available through regular activities involving the sale of services or assets in the working capital group. Effects upon net profit of gains or losses relating to transactions involving noncurrent items are canceled here.

(2) Funds relating to noncurrent items are separately analyzed and stated at the actual amounts provided or applied.

If the loss on the sale of the stock in the preceding example had originally been charged to Earned Surplus, a credit to this account instead of to Funds Provided by Operations would be required in adjusting the accounts, since Earned Surplus and not the net income figure would have been reduced by the loss.

Balances shown in the net changes columns as adjusted together with the supplementary data established by adjustments are extended to the funds and working capital columns and the working capital change is calculated. Working papers may now be used as a basis for the preparation of the statement of application of funds. A statement prepared from the working papers illustrated on page 863 follows:

**KELLY TRADING CO.**  
**STATEMENT OF APPLICATION OF FUNDS**  
**FOR YEAR ENDED DECEMBER 31, 1953**

Funds were provided by:

Operations:

Profit per income statement .....				\$20,000
Add: Depreciation .....	\$6,000			
Loss on sale of stock (proceeds from sale reported separately) .....	1,500	7,500	\$27,500	
Issuance of capital stock .....			60,000	
Sale of Smith Co. stock .....			3,500	
				<u>\$91,000</u>

Funds were applied to:

Purchase of plant and equipment .....	\$45,000			
Payment of dividends .....		5,000	50,000	
Increase in working capital .....				<u>\$41,000</u>

The increase in working capital is accounted for as follows:

WORKING CAPITAL ITEMS	DEC. 31 1952	DEC. 31 1953	WORKING CAPITAL	
			INCREASE	DECREASE
Current assets:				
Cash .....	20,000	15,000		5,000
Notes receivable .....	5,000	5,000		
Accounts receivable (net) .....	23,500	43,000	19,500	
Inventories .....	20,000	51,500	31,500	
Current liabilities:				
Notes payable .....	10,000	5,000	5,000	
Accounts payable .....	15,000	25,000		10,000
			<u>56,000</u>	<u>15,000</u>
Increases in working capital items				56,000
Decreases in working capital items				15,000
Increase in working capital .....				<u>41,000</u>

**PREPARATION OF  
WORKING PAPERS  
AND STATEMENT  
ILLUSTRATED**

The following pages illustrate the preparation of working papers and a statement of application of funds where adjustments are more numerous as well as more complex than

those offered in the previous example.

Comparative account balances for Richard and Rodger, Inc. are listed on the working papers on pages 868 and 869. The information that follows is assembled in obtaining explanations for changes as reported by account balances. The necessary adjustments resulting from the analysis of the accounts are listed and also appear in the adjustment columns of the working papers.

The earned surplus account shows the following information:

EARNED SURPLUS				
1953		1952		
Mar. 1	Cash Dividends.....	5,000	Dec. 31 Balance.....	20,000
Aug. 10	Correction for Understatement of Depreciation Charge on Office Equipment in 1952...	400	Reserve for Plant Extension.....	65,000
Sept. 1	50% Stock Dividend...	50,000		
Dec. 31	Loss for Year from Profit and Loss....	6,800		
	31 Balance.....	22,800		
		<u>85,000</u>		<u>85,000</u>
			1953	
			Dec. 31 Balance.....	22,800

The adjustments required on the working papers to cancel the surplus changes and to report separately the individual items summarized in earned surplus follow:

(a)	Funds Provided by Operations: Loss per Income Statement.....	6,800	
	Earned Surplus.....		6,800
	To transfer net loss from Earned Surplus to separate section reporting funds provided by operations.		
(b)	Funds Applied to Payment of Dividends.....	5,000	
	Earned Surplus.....		5,000
	To transfer charge to Earned Surplus to separate line reporting funds applied to dividends.		
(c)	Allowance for Depreciation of Office Equipment.....	400	
	Earned Surplus.....		400
	To cancel effects of entry correcting accounts for understatement of depreciation of prior year since funds were not affected.		
(d)	Capital Stock.....	50,000	
	Earned Surplus.....		50,000
	To cancel effects of entry recording distribution of stock dividend since funds were not affected.		
(e)	Earned Surplus.....	65,000	
	Reserve for Plant Extension.....		65,000
	To cancel effects of entry returning appropriated surplus balance to Earned Surplus since funds were not affected.		

The income statement summarizes activities for the year as follows:

Net loss.....		\$12,000
Extraordinary items:		
Gain on sale of Bruin Co. stock.....	\$6,000	
Less: Loss on trade of delivery equipment.....	800	5,200
Decrease in earned surplus for year.....		<u>\$ 6,800</u>

RICHARD AND  
WORKING PAPERS FOR STATEMENT  
FOR YEAR ENDED

ACCOUNTS	BALANCES	
	DEC. 31 1952	DEC. 31 1953
Cash	14 400	8,200
Accounts Receivable (net)	25,000	25,000
Inventories	60,000	75,000
Prepaid Expenses	2,000	2,600
Investment in Bruin Co. Stock	10,000	
-----	-----	-----
Land	25 000	25,000
Buildings	80 000	140,000
Machinery and Equipment	60,000	100,000
Office Equipment	6,000	7,200
Delivery Equipment	5,000	5,300
-----	-----	-----
Patents	12 000	10,500
Discount on Bonds Payable		2,700
Treasury Stock		10,000
-----	299,400	411 500
Allowance for Depreciation of Buildings	16 000	31,500
Allowance for Depreciation of Machinery and Equipment	25,000	24,000
-----	-----	-----
Allowance for Depreciation of Office Equipment	2,400	3,800
Allowance for Depreciation of Delivery Equipment	2,000	2,100
Accrued Salaries	1,000	800
Accounts Payable	36 000	50,000
-----	-----	-----
Bonds Payable		50,000
Capital Stock	100 000	150 000
Paid-In Surplus	32 000	30,000
Appraisal Surplus		46 500
-----	20,000	22,800
Earned Surplus		
Reserve for Plant Extension	65 000	
-----	299,400	411,500
Funds Provided by Operations		
Loss per Income Statement		
Deduct: Gain on Sale of Bruin Co. Stock		
Add: Loss on Trade of Delivery Equipment		
Depreciation and Patent Amortization		
Bond Discount Amortization		
-----	-----	-----
Funds Applied to Payment of Dividends		
Funds Provided by Sale of Bruin Co. Stock		
Funds Applied to Purchase of Delivery Equipment		
Funds Applied to Overhauling of Machinery		
Funds Applied to Purchase of Machinery		
Funds Provided by Issuance of Bonds		
Funds Applied to Purchase of Treasury Stock		

Decrease in Working Capital

RODGER, INC.  
OF APPLICATION OF FUNDS  
DECEMBER 31, 1953

NET CHANGES		ADJUSTMENTS		FUNDS		WORKING CAPITAL	
DR	CR	DR	CR	ASSETS	LIABILITIES	INCREASE	DECREASE
	6 200						6 200
15 000						15 000	
600						600	
	10 000	(f)	10 000				
-----							-----
60 000			i) 60 000				
40 000		k)	3 000 (m) 45 000				
1 200				1 200			
300		g)	2 400 k) 2 700				
---							-----
	1 500	(h)	1 500				
2 700		o)	300 (n) 3 000				
10 000			1) 10 000				
							-----
	15 000	l)	2 000				
		(i)	1 000				
1 000		(j)	1 500				
		h)	12 000 k) 5 000				
			(l) 5 000				
	1 400	)	400				
		(h)	1 000				
	100	h)	1 100 k) 1 000				
200						200	
	14 000						14 000
							-----
	50 000	n)	50 000				
	0 000	l)	0 000				
2 000			1) 2 000				
	40 000	i)	18 000				
			1) 1 500				
	2 800	(c)	6 000				
			n) 6 800				
			(i) 5 000				
			(j) 100				
			(d) 50 000				
			(e) 65 000				
65 000							
118 000	198 000						
							-----
		i)	6 800				
		f)	6 000				
			(g) 800		5 000		
			h) 17 600				
			(o) 300				
		(i)	5 000		000		
			(f) 16 000		16 000		
		(g)	2 100		2 100		
		(l)	8 000		8 000		
		(m)	45 000		45 000		
-----							
			(n) 47 000		47 000		
		(p)	12 000		12 000		
		347 100	347 100	73 300	68 900	15 800	20 200
.. . .					4 400	4 400	
				73 300	73 300	20 200	20 200

An analysis of extraordinary items reveals that Bruin Co. stock cost \$10,000 and was sold for \$16,000. A delivery truck, cost \$2,400, book value \$1,400, was traded in on a new truck costing \$2,700, an allowance of \$600 being received on the old truck. The following entry was made at the time of the trade.

Delivery Equipment	2,700	
Allowance for Depreciation of Delivery Equipment	1,000	
Loss on Trade of Delivery Equipment	800	
Delivery Equipment		2,400
Cash		2,100

Depreciation charges reported on the income statement are: buildings, \$2,000; machinery and equipment, \$12,000; office equipment, \$1,000; delivery equipment, \$1,100. Operations were charged with \$1,500 representing patent cost amortization.

The foregoing information results in the following adjustments:

- (f) Investment in Bruin Co Stock 10,000  
 Funds Provided by Operations. Deduct Gain on Sale of Bruin Co Stock 6,000  
     Funds Provided by Sale of Bruin Co Stock 16,000  
     To cancel changes in account balances affected by sale of investment, funds provided by sale of stock being reported separately.
- (g) Funds Applied to Purchase of Delivery Equipment 2,100  
 Delivery Equipment 2,400  
     Delivery Equipment 2,700  
     Allowance for Depreciation of Delivery Equipment 1,000  
     Funds Provided by Operations Add Loss on Trade of Delivery Equipment 800  
     To cancel changes in account balances affected by trade-in of delivery equipment, funds applied to acquisition of equipment being reported separately.
- (h) Allowance for Depreciation of Buildings 2,000  
 Allowance for Depreciation of Machinery and Equipment 12,000  
 Allowance for Depreciation of Office Equipment 1,000  
 Allowance for Depreciation of Delivery Equipment 1,100  
 Patents 1,500  
     Funds Provided by Operations Add Depreciation and Patent Cost Amortization 17,600  
     To cancel changes in depreciation allowances and patents accounts and to increase funds provided by operations for charges to profit and loss that did not require funds

After adjusting data as supplied by the surplus statement and income statement have been recorded on the working papers, further analysis of all noncurrent asset, noncurrent liability, and capital

items showing account balance changes not fully explained or canceled is in order. Changes in the following accounts have already been fully accounted for and require no further attention:

Investment in Bruin Co. Stock  
 Delivery Equipment and Allowance for Depreciation of Delivery Equipment  
 Patents  
 Earned Surplus  
 Reserve for Plant Extension

The following changes, however, require further analysis and explanation:

Buildings, \$60,000 dr.; Allowance for Depreciation of Buildings, \$13,500 cr. (\$15,500 cr. less \$2,000 dr. adjustment)  
 Machinery and Equipment, \$40,000 dr.; Allowance for Depreciation of Machinery and Equipment, \$13,000 dr. (\$1,000 dr. plus \$12,000 dr. adjustment)  
 Office Equipment, \$1,200 dr. (Allowance for Depreciation of Office Equipment, \$1,400 cr., has already been canceled by \$1,400 dr.)  
 Discount on Bonds Payable, \$2,700 dr.  
 Treasury Stock, \$10,000 dr.  
 Bonds Payable, \$50,000 cr.  
 Paid-In Surplus, \$2,000 dr.  
 Appraisal Surplus, \$46,500 cr.

The information that follows is disclosed upon reference to transactions accounting for the account balance changes:

Buildings, cost \$80,000, were appraised at a replacement cost of \$140,000, the revaluation entry being:

Buildings (appraisal increase) .....	60,000
Allowance for Depreciation of Buildings (appraisal increase) .....	12,000
Appraisal Surplus .....	48,000

Depreciation was recorded at cost. Depreciation of the appraisal increase was recorded by the following entry:

Appraisal Surplus .....	1,500
Allowance for Depreciation of Buildings (appraisal increase) .....	1,500

Adjustments on the working papers that cancel change balances in the buildings, allowance, and appraisal surplus accounts are:

(i) Allowance for Depreciation of Buildings .....	12,000
Appraisal Surplus .....	48,000
Buildings .....	60,000

To cancel effects of entry recording appraisal since funds were not affected.

(j) Allowance for Depreciation of Buildings	1,500	
Appraisal Surplus		1,500
To cancel effects of entry recording depreciation on building appraisal increase since funds were not affected.		

Fully depreciated machinery, cost \$5,000, was scrapped, the asset balance being charged against the allowance as follows:

Allowance for Depreciation of Machinery and Equipment	5,000	
Machinery and Equipment		5,000

The life of remaining machinery was extended by overhauling and parts replacement at a cost of \$8,000, which was recorded in the following manner:

Allowance for Depreciation of Machinery and Equipment	8,000	
Cash		8,000

Machinery was acquired during the year at a cost of \$45,000.

Adjustments as a result of the foregoing are:

(k) Machinery and Equipment	5,000	
Allowance for Depreciation of Machinery and Equipment		5,000
To cancel effects of closing machinery and equipment against depreciation allowance since funds were not affected.		
(l) Funds Applied to Overhauling of Machinery	8,000	
Allowance for Depreciation of Machinery and Equipment		8,000
To transfer charge against allowance to separate line reporting funds applied to overhauling machinery.		
(m) Funds Applied to Purchase of Machinery	45,000	
Machinery and Equipment		45,000
To transfer charges to machinery to separate line reporting funds applied to purchase of machinery.		

Adjustment (m) could be omitted, \$45,000, the result of a \$40,000 debit in the net change column and a \$5,000 debit in the adjustment column being carried to the funds applied column. However, the adjustment is made in the interest of clarity; the change balance is cleared and a full explanation is offered in the lower section of the working papers.

Office equipment of \$1,200 was acquired. An adjustment is not required in this case, since there was a single change of \$1,200 in the account. The \$1,200 debit change is simply carried to the funds applied column in completion of the working papers. The account Allowance for Depreciation of Office Equipment was cleared by previous adjustments.

Ten-year bonds of \$50,000 were issued at 94 at the beginning of the year. Bond discount of \$300 was charged to operations for the year. The following adjustments are made:

(n) Bonds Payable .....	50,000	
Discount on Bonds Payable .....		3,000
Funds Provided by Issuance of Bonds .....		47,000
To cancel changes in account balances affected by bond issue, funds provided by issuance being reported separately.		
(o) Discount on Bonds Payable .....	300	
Funds Provided by Operations: Add Bond Discount Amortization .....		300
To cancel change in bond discount account and increase funds provided by operations for charge to profit and loss that did not require funds.		

Treasury stock, par \$10,000 was acquired for \$12,000, the paid-in surplus account being charged for the premium on the purchase. The following adjustment is made:

(p) Funds Applied to Purchase of Treasury Stock .....	12,000	
Treasury Stock .....		10,000
Paid-In Surplus .....		2,000
To cancel changes in account balances affected by acquisition of treasury stock, funds applied to purchase of stock being reported separately.		

Working papers can now be completed by transferring fund sources and applications to the Funds columns and calculating the change in working capital; this change should be the same as that found in the Working Capital columns.

The statement of application of funds prepared from the working papers illustrated on pages 868 and 869 is given on the following page.

### SPECIAL PROBLEMS

The analyses that are required in the development of the funds statement may be simple or complex as already illustrated. However, in each instance where a noncurrent or a capital account balance has changed, the question is asked: "Does this imply a change in working capital, and if so, to what extent?" Frequently the answer to this question is obvious; but in some cases careful analysis is required. The following items require special mention:

(1) Assume that a company declares a dividend that is to be paid in the following period. Here, Earned Surplus is debited and Dividends Payable is credited. Declaration of the dividend has raised current liabilities and thus reduced working capital. Subsequent payment of

**RICHARD AND RODGER, INC.**  
**STATEMENT OF APPLICATION OF FUNDS**  
**FOR YEAR ENDED DECEMBER 31, 1953**

Funds were provided by:

Operations:

Depreciation and patent cost amortization . . .	\$17,600		
Bond discount amortization . . . . .	300		
Loss on trade of delivery equipment (net funds applied to purchase of asset reported separately below) . . . . .	800	\$18,700	

Deduct: Loss per income statement . . . . .	\$ 6,800		
Gain on sale of investment in stock (total sales proceeds reported separately below) . . . . .	6,000	12,800	\$ 5,900

Sale of Bruin Co. stock . . . . .			16,000
Issuance of bonds . . . . .			47,000

\$68,900

Funds were applied to:

Purchase of plant and equipment items:

Office equipment . . . . .	\$ 1,200		
Delivery equipment . . . . .	2,100		
Machinery . . . . .	45,000	\$48,300	

Overhauling of machinery . . . . .		8,000	
Purchase of treasury stock . . . . .		12,000	
Payment of dividends . . . . .		5,000	73,300

Decrease in working capital . . . . .			\$ 4,400
---------------------------------------	--	--	----------

The decrease in working capital is accounted for as follows:

WORKING CAPITAL ITEMS	DEC. 31 1952	DEC. 31 1953	WORKING CAPITAL	
			INCREASE	DECREASE
Current assets:				
Cash . . . . .	14,400	8,200		6,200
Accounts receivable (net) . . . .	25,000	25,000		
Inventories . . . . .	60,000	75,000	15,000	
Prepaid expenses . . . . .	2,000	2,600	600	
Current liabilities:				
Accrued salaries . . . . .	1,000	800	200	
Accounts payable . . . . .	36,000	50,000		14,000
			15,800	20,200
Decreases in working capital items				20,200
Increases in working capital items				15,800
Decrease in working capital . . . . .				4,400

the dividend will have no further effect upon the amount of working capital, simply serving to shrink Cash and Dividends Payable by equal amounts. Declaration of a dividend thus should be reported as "funds applied" on the funds statement; confirmation of the reduction in working capital is offered in the working capital schedule supporting the statement. The reduction in Earned Surplus offers the basis for this analysis. Payment of the dividend in the next period will carry no funds significance.

(2) Assume that a long-term obligation becomes payable within a year, and hence requires change to the current classification. Such a change calls for recognition as "funds applied." It is not payment of this item but the change in classification that has operated to impair working capital; payment will have no effect on working capital, since Cash and the payable will shrink by equal amounts. The reduction in the noncurrent liability item provides the basis for the application of funds analysis. The nature of the application would be described as "Funds applied to long-term obligations maturing currently"; the schedule of working capital will confirm such working capital reduction.

(3) Assume the acquisition of a parcel of real estate. Payment in cash is made, part of this cash being acquired through the issue of long-term notes. Here, the increase in long-term notes would be recognized as a source of funds; the increase in real estate would be represented as an application of funds; the two transactions would result in an excess of funds applied, which is confirmed by a decreased working capital position. However, assume the acquisition of such real estate with the issue to the seller of a first-mortgage note for a part of the purchase price and payment of cash for the balance. Under such circumstances, instead of treating the increase in the long-term obligation as a source of funds and the increase in the property item as an application of funds, it would be better to show the net reduction in working capital arising from the acquisition of the property subject to mortgaged indebtedness as follows:

Funds applied:

To purchase of real estate:

Purchase price . . . . .	\$100,000	
Less obligation assumed in connection with purchase . . . . .	40,000	\$60,000

(4) In the previous illustrations, short-term deferred items were classified on the balance sheet as current items and therefore were treated as working capital items in the analysis of the change in working

capital. It was indicated in previous chapters that short-term deferred expense and income items are frequently classified with long-term deferred items. Such a treatment would call for the special analysis of short-term deferred items, just as in the case of other items classified as noncurrent, since their exclusion from the current group makes them part of the explanation for the change that took place in the current classification. Whatever the classification employed for short-term deferrals, changes in long-term deferrals will require analysis, and the effects of their changes upon working capital must be reported on the funds statement.

It should be noted that, in previous illustrations, adjustments were required only to noncurrent asset and liability balances and to capital balances. Since adjustments never affect working capital items, it would be possible to substitute working capital totals for the individual current assets and current liabilities for each year in the development of working papers. This will reduce the amount of detail listed on the working papers. However, such detail would still be required in the preparation of the formal funds statement. Further removal of detail on the working papers is possible by eliminating the first two columns listing comparative balance sheet amounts and simply beginning with a listing of account change balances. Working papers incorporating the modifications indicated above would appear as follows:

ACCOUNTS	NET CHANGES		ADJUSTMENTS		FUNDS		WORKING CAPITAL	
	DR.	CR.	DR.	CR.	APPLIED	PROVIDED	INCREASE	DECREASE
Working Capital (followed by noncurrent items, capital, etc.)	30,000						30,000	

## QUESTIONS

1. What is an application of funds statement? What information does it offer that is not provided by the income statement? by the comparative balance sheet? by the statement of cash receipts and disbursements?

2. Define "fund" as used in relation to the application of funds statement?

3. From what sources is the necessary information obtained in preparing a statement of application of funds?

4. Name a source of funds originating from a transaction involving (a) noncurrent assets, (b) noncurrent liabilities, (c) capital stock, (d) earned surplus. Name an application of funds identified with each group.

5. What three classes of adjustments are usually necessary in the preparation of working papers for an application of funds statement?

6. Give five adjustments to cancel book entries that have no effect upon funds.

7. Give five adjustments that summarize changes in two or more accounts in stating a source or application of funds.

8. Give five examples where a single account change may provide a basis for recognizing both a source and an application of funds.

9. Explain why depreciation is added back to the net income balance in arriving at funds provided by operations.

10. The management of the Mason Co. is surprised to find that the funds statement reports "Funds provided from operations, \$50,000," after the income statement had shown a net loss of \$15,000. How do you explain this difference?

11. (a) In the preparation of the funds statement, what adjustment is made for an increase in a bond discount balance arising from the current issuance of bonds? (b) What adjustment is made for a decrease in a bond discount balance arising from bond discount amortization?

12. (a) Give five adjustments that add to the net profit figure in calculating funds provided by operations. (b) Give five adjustments that subtract from the net profit figure in calculating funds provided by operations.

13. The Palace Corporation has no transactions for the year 1953. However, on December 10 the board of directors of the company meets and declares a dividend of \$50,000 payable on January 15, 1954. Does such action give rise to information that would properly be reflected on an application of funds statement?

14. Notes of \$50,000 due on July 1, 1954, were reported by the Webb Co. as a long-term obligation on the balance sheet prepared on December 31, 1952, but as a short-term obligation on the balance sheet prepared on December 31, 1953. What effect, if any, will such a change in classification have on the funds statement prepared for the year 1953?

15. Companies A and B each show an increase in working capital for 1953 of \$30,000. Funds statements for the year for the two companies are as follows:

	<u>COMPANY A</u>		<u>COMPANY B</u>	
<b>Funds provided:</b>				
By operations (as adjusted) . . . . .	\$ 15,000		\$15,000	
By issue of long-term notes . . . . .	60,000			
By sale of capital stock . . . . .		\$ 75,000	60,000	\$75,000
<b>Funds applied:</b>				
To acquisition of additional plant . . . . .	\$ 20,000		\$40,000	
To payment of dividends . . . . .	25,000	45,000	5,000	45,000
<b>Increase in working capital . . . . .</b>		<b>\$ 30,000</b>		<b>\$30,000</b>
The increase in working capital is accounted for as follows:				
	<u>INCREASE</u>	<u>DECREASE</u>	<u>INCREASE</u>	<u>DECREASE</u>
<b>Current assets:</b>				
Cash . . . . .		\$ 10,000	\$15,000	
Accounts receivable . . . . .	\$ 40,000		10,000	
Inventories . . . . .	60,000		25,000	
<b>Current liabilities:</b>				
Notes payable . . . . .		20,000		\$ 5,000
Accounts payable . . . . .		40,000		15,000
	\$100,000	\$ 70,000	\$50,000	\$20,000
		30,000		30,000
<b>Net increase . . . . .</b>				
	\$100,000	\$100,000	\$50,000	\$50,000

Evaluate and compare the financial policies followed by Companies A and B for 1953 as revealed by the funds statements above.

### EXERCISES

1. The balance sheets of the ABC Company at the end of 1952 and 1953 are:

	1952	1953
Cash . . . . .	\$ 20,000	\$ 15,000
Accounts receivable (net) . . . . .	34,000	32,000
Merchandise inventory . . . . .	50,000	64,000
Investment in branch . . . . .	—	14,000
Plant and equipment . . . . .	75,000	85,000
Delivery equipment . . . . .	16,000	21,000
Real estate . . . . .	51,000	53,000
Patents . . . . .	20,000	19,000
	<u>\$266,000</u>	<u>\$303,000</u>
Allowance for depreciation of plant and equipment	\$ 7,500	\$ 16,000
Allowance for depreciation of delivery equipment .	3,200	7,600
Accounts payable . . . . .	7,300	4,400
Notes payable . . . . .	28,000	—
Mortgage payable . . . . .	—	30,000
Capital stock . . . . .	200,000	220,000
Surplus . . . . .	20,000	25,000
	<u>\$266,000</u>	<u>\$303,000</u>

Assuming that no fixed assets were traded or sold during the year and that the only change in surplus arose from net earnings, prepare a statement of application of funds without the use of working papers.

2. State how each of the following transactions will be reflected on the application of funds statement of the Forbes Corporation:

- (a) Marketable securities are purchased for \$12,000.
- (b) Machinery, book value \$6,000, is traded for new equipment costing \$15,000; a trade-in value of \$5,000 is allowed on the old equipment, the balance of the purchase price to be paid in twelve monthly installments.
- (c) Buildings are acquired for \$60,000, the company paying \$25,000 cash and signing a mortgage note payable in 5 years for the balance of the purchase price.
- (d) Uncollectible accounts of \$650 are written off against the allowance for bad debts.
- (e) As part of a quasi-reorganization, paid-in surplus of \$210,000 is established by a reduction in the stated value assigned to capital stock, and plant and equipment items of \$185,000 are then written off against such paid-in surplus.
- (f) 4% bonds of \$150,000 are issued at 99, part of the proceeds being applied to the retirement of 5% bonds of \$50,000 at 102.
- (g) Cash of \$100,000 was paid on the purchase of business assets consisting of: merchandise, \$40,000; fixtures, \$15,000; land and buildings, \$25,000; and goodwill, \$20,000.
- (h) A cash dividend of \$5,000 is declared, payable at the beginning of the following year.

3. Give the adjustments needed for working papers for the statement of application of funds upon analysis of the following earned surplus account:

EARNED SURPLUS			
1953		1953	
June 1	Stock dividend . . . . .	Jan. 1	Balance . . . . .
	200,000		760,000
	1 Goodwill written off . . . . .	Mar. 20	Correction for under-
	100,000		statement of inven-
Aug. 5	Discount on sale of		tory at end of 1952 . . . . .
	treasury stock, par		12,000
	\$150,000, for \$125,000 . . . . .	Mar. 25	Gain on sale of X Co.
	25,000		stock (cost, \$60,000) . . . . .
Dec. 5	Cash dividends . . . . .		20,000
	50,000	July 1	Gain on redemption of
	31 Reserve for contin-		bonds of \$200,000 at
	gencies . . . . .		96 . . . . .
	100,000		8,000
	31 Balance . . . . .		800,000
	325,000		
	800,000		
	<u>800,000</u>		
		1954	
		Jan. 1	Balance . . . . .
			325,000

4. The earned surplus account for the Meadows Co. at the end of 1953 shows the following:

EARNED SURPLUS			
1953		1953	
Jan. 30	Call premium paid on re-	Jan. 1	Balance . . . . .
	retirement of bonds . . . . .		160,000
	12,000	Mar. 20	Gain on sale of land
Mar. 1	Goodwill written off . . . . .		(cost \$50,000). . . . .
	50,000		15,000
Mar. 15	Correction for understatement of depreciation in	Dec. 31	Net income from profit
	periods . . . . .		and loss . . . . .
	40,500		42,500

- (a) What adjustments would be made for the changes in earned surplus on working papers for a statement of application of funds?
- (b) Assume that the clean surplus approach was followed and that extraordinary items including corrections were reported in nominal accounts, earned surplus showing a net decrease of \$45,000 for the year. What adjustments would be made on the application of funds statement under such circumstances for each of the above items?

5. From the information that follows, give the necessary adjustments to clear the change balances for the accounts listed in the preparation of working papers for an application of funds statement.

	1952	1953
Land	\$ 40,000	\$ 25,000
Buildings	100,000	100,000
Allowance for Depreciation of Buildings	62,500	68,500
Machinery	45,000	39,000
Allowance for Depreciation of Machinery	16,000	15,500
Delivery Equipment	15,000	18,000
Allowance for Depreciation of Delivery Equipment	6,000	6,500
Tools	12,000	14,000
Patents	4,500	3,500
Goodwill	50,000	—
Discount on Bonds Payable	6,000	—
Bonds Payable	100,000	—
Capital Stock	250,000	350,000
Treasury Stock	—	22,000
Earned Surplus	180,000	147,700
Reserve for Bond Sinking Fund	100,000	—

EARNED SURPLUS			
Stock dividend	100,000	Balance	180,000
Loss on scrapping of machinery, cost \$6,000, for which an allowance of \$4,500 had been provided	1,500	Gain on sale of land, cost \$15,000, sold for \$18,000	3,000
Premium on purchase of treasury stock, par \$22,000	8,000	Gain on trade of delivery equipment, cost \$4,000, book value, \$2,500, allowance of \$3,200 being received on new machine costing \$7,000	700
Goodwill	50,000	Reserve for bond sinking fund	100,000
Discount, \$4,000, call premium, \$2,500, on bond retirement	6,500	Net profit for year	40,000
Cash dividends	10,000		
Balance	147,700		
	<u>323,700</u>		<u>323,700</u>
		Balance	147,700

The income statement reports depreciation of buildings, \$6,000; depreciation of machinery, \$4,000; depreciation of delivery equipment, \$2,000; tools amortization, \$4,000; patents amortization, \$1,000; and bond discount amortization, \$2,000.

PROBLEMS

28-1. The following data was obtained from the books and records of the Williams Co.:

	DECEMBER 31	
	1952	1953
Current assets.....	\$250,000	\$300,000
Plant and equipment (net).....	140,000	165,000
Goodwill.....	20,000	—
Bond discount.....		3,800
	<u>\$410,000</u>	<u>\$468,800</u>
Current liabilities.....	\$110,000	\$155,000
Bonds payable.....	—	100,000
Preferred stock.....	100,000	—
Common stock.....	100,000	150,000
Paid-in surplus.....	20,000	20,000
Revaluation surplus.....	25,000	—
Earned surplus.....	55,000	43,800
	<u>\$410,000</u>	<u>\$468,800</u>

EARNED SURPLUS	
Premium on retirement of preferred stock..... 5,000	Balance, Jan. 1..... 55,000
Stock dividend on common stock..... 50,000	Gain on sale of land..... 35,000
Cash dividends paid during year..... 15,000	Net income after income tax.... 43,800
Goodwill written off..... 20,000	

Ten-year bonds of \$100,000 were issued on July 1, 1953, at 96, proceeds being used in the retirement of preferred stock. Land, cost \$30,000 and recorded on the books at an appraised value of \$55,000, was sold at \$65,000. The cash proceeds from the sale were applied in the construction of new buildings costing \$85,000. Depreciation recorded for the year was \$5,000.

Instructions: Prepare working papers and a statement of application of funds.

28-2. The following data was taken from the books and records of the Wilson Company:

EARNED SURPLUS	
1953	1953
Goodwill Written Off..... 24,999	Balance..... 24,750
Premium on Retirement of Preferred Stock..... 1,000	Increase per Income Statement..... 30,100
Cash Dividends..... 15,000	

## INCOME STATEMENT DATA

Net Income after Income Taxes .....	\$34,600
Add Allowance on Trade of Equipment .....	1,500 ✓
	36,100
Deduct:	
Loss on Sale of Securities .....	\$2,500 ✓
Loss on Retirement of Bonds .....	3,500 ✓ 6,000
	<u>          </u>
Increase in Earned Surplus .....	<u>\$30,100</u>

## BALANCE SHEET DATA

DECEMBER 31

	1952	1953
Current Assets (net) .....	\$128,500	\$142,350
Plant and Equipment .....	\$96,000	\$100,500
Less Allowance for Depreciation ....	30,000	34,000
	<u>          </u>	<u>          </u>
Investments in Stock and Bonds .....	30,000	27,000
Goodwill .....	25,000	1
Unamortized Bond Discount .....	1,250	—
	<u>\$250,750</u>	<u>\$235,851</u>
Current Liabilities .....	\$ 26,000	\$ 42,000
Bonds Payable .....	50,000	—
Preferred Stock (\$100 par) .....	50,000	—
Common Stock (\$10 par) .....	100,000	150,000
Paid-In Surplus .....	—	30,000
Earned Surplus .....	24,750	13,851
	<u>\$250,750</u>	<u>\$235,851</u>

Fully depreciated equipment, original cost \$10,500, was traded in on new equipment costing \$15,000, \$1,500 being allowed by the vendor on the trade in. One hundred shares of Bliss Co. preferred stock, cost \$15,000, held as a long-term investment, was sold at the beginning of the year. Additional changes in the investments account resulted from the purchase of U. S. bonds. The company issued common stock in April, and part of the proceeds was used to retire preferred stock at 102 shortly thereafter. On July 1 the company called in its bonds outstanding, paying a premium of 5% on the call. Discount amortization on the bonds to the date of call was \$250. Depreciation for the year taken on plant and equipment assets was \$14,500.

*Instructions:* Prepare working papers and a statement of application of funds.

**28-3.** The following information is assembled in the preparation of a statement of application of funds for the Biltmore Corporation:

BALANCE SHEET DATA

DECEMBER 31

	1952	1953
Cash .....	\$ 3,125*	\$ 21,875
Accounts Receivable .....	66,125	50,000
Inventories .....	72,000	90,000
Plant and Equipment .....	\$95,000	\$130,000
Less Allowance for Depreciation ..	20,000	21,500
Investments .....	20,000	8,000
Patents .....	30,000	
	<u>\$260,000</u>	<u>\$278,375</u>
Accounts Payable.....	\$ 50,000	\$ 37,000
Bonds Payable.....	20,000	50,000
Premium on Bonds Payable .....	-	2,375
Preferred Stock (\$100 par) .....	50,000	-
Common Stock (\$10 par) .....	100,000	150,000
Surplus .....	40,000	39,000
	<u>\$260,000</u>	<u>\$278,375</u>

\*Credit Balance

INCOME STATEMENT DATA FOR YEAR ENDED DECEMBER 31, 1953

Net Income before Income Taxes .....	\$28,000
Add Gain on Sale of Investments.....	3,000
	<u>\$31,000</u>
Deduct:	
Premium on Retirement of Bonds.....	\$ 1,000
Loss on Disposal of Equipment .....	3,500
Patents Written Off .....	30,000
	<u>34,500</u>
Loss to Earned Surplus .....	<u>\$ 3,500</u>

EARNED SURPLUS

1953	1953
Oct. 15 Cash Dividends .....	Jan. 1 Balance .....
Dec. 12 Premium on Retirement of Preferred Stock ...	Premium on Issuance of Common Stock.....
Dec. 31 Loss per Income Statement .....	
12,500	40,000
5,000	20,000
3,500	

Equipment, cost \$10,000, book value, \$4,000, was scrapped, salvage of \$500 being recovered on the disposal. Additional equipment, cost \$45,000, was acquired during the year. Securities, cost \$12,000, were sold for \$15,000. Patents of \$30,000 were written off against profits. 7% bonds, face value \$20,000, were called in at 105, and new 10-year, 5% bonds of \$50,000 were issued at 105 on July 1. Preferred stock was retired at a cost of 110 while \$50,000 in common stock was issued at 14. Depreciation on plant and equipment for the year was \$7,500.

Instructions: Prepare working papers and a statement of application of funds.

28-4. Financial data for the Franklin Manufacturing Co. are presented on this and the following page.

**FRANKLIN MANUFACTURING CO.**  
**COMPARATIVE BALANCE SHEET**  
**DECEMBER 31, 1952 AND 1953**

		1952	1953
<b>ASSETS</b>			
Cash		\$ 23,000	\$ 29,500
Notes receivable		1,000	
Accounts receivable	.... \$ 26,625	\$ 32,000	
Less: Allowance for bad debts	... 2,125	24,500	1,500
			30,500
Inventories	.	40,000	54,000
Supplies		1,500	1,000
Miscellaneous prepaid expenses	.	3,000	3,500
Investments in outside companies		16,000	27,000
Land		40,000	80,000
Buildings	\$ 90,000		\$ 125,000
Less: Allowance for depreciation	36,000	54,000	40,500
			84,500
Machinery	\$ 75,000		\$ 95,000
Less: Allowance for depreciation	40,000	35,000	44,000
			51,000
Goodwill	. . . . .	50,000	
Bond discount	. . . . .	4,250	8,025
		<u>\$292,250</u>	<u>\$369,025</u>
<b>LIABILITIES AND CAPITAL</b>			
Notes payable	.	\$ 11,000	\$ 10,000
Accounts payable	....	23,000	17,500
Miscellaneous accrued expenses	....	4,000	6,500
Estimated income taxes payable	....	10,000	15,000
Bonds payable	....	50,000	125,000
Capital stock (Par \$10)	....	100,000	125,000
Paid-in surplus	. . . . .	30,000	35,000
Earned surplus	. . . . .	64,250	35,025
		<u>\$292,250</u>	<u>\$369,025</u>

Ten-year bonds of \$50,000 had been issued on July 1, 1951, at 90. Additional ten-year bonds of \$75,000 had been issued on July 1, 1953, at 94.

The following entry was made in 1953 upon the sale of obsolete machinery:

Cash	6,000
Allowance for Depreciation of Machinery	3,500
Loss on Disposal of Machinery	1,500
Machinery	11,000

Fully depreciated storage quarters were dismantled during the year, and buildings, cost \$1,500, were written off against the allowance for depreciation of buildings account. Investments in outside companies that

**FRANKLIN MANUFACTURING CO.**  
**CONDENSED STATEMENT OF INCOME AND EARNED SURPLUS**  
**FOR YEAR ENDED DECEMBER 31, 1953**

Gross income.....		\$205,000
Deduct: Cost of goods sold.....	\$104,500	
Selling, general, administrative, and other expenses.....	40,225	
Depreciation of buildings....	\$6,000	
Depreciation of machinery....	7,500	13,500
Income taxes .....	15,000	173,225
Net income .....		\$ 31,775
Balance of earned surplus at beginning of 1953 ..		64,250
		\$ 96,025
Add: Gain on sale of outside securities .....		6,500
		\$102,525
Deduct: Loss on disposal of machinery .....	\$ 1,500	
Cash dividends.....	16,000	
Goodwill written off.....	50,000	67,500
Balance of earned surplus at end of 1953 .....		\$ 35,025

cost \$12,000 were sold at the beginning of the year for \$18,500, and additional securities were subsequently acquired during the year. Additional capital stock was issued by the company during the year at 12 in order to raise working capital.

*Instructions:* Prepare working papers and a statement of application of funds.

28-5. The following data are assembled in the preparation of a statement of application of funds for Kelly Shipyards, Inc.:

EARNED SURPLUS			
1953	1953		
Stock Dividend.....	42,500	Jan. 1 Balance.....	57,250
Cash Dividends.....	10,000	Dec. 31 Earned Surplus Increase	
Reserve for Contingencies ..	25,000	per Income Statement	31,250

**INCOME STATEMENT DATA FOR YEAR ENDED DECEMBER 31, 1953**

Net Income.....		\$28,750
Add: Gain on sale of outside investments.....		7,500
		\$36,250
Deduct:		
Loss on bond retirement.....	\$4,000	
Loss on trade of machinery .....	1,000	5,000
Increase in earned surplus.....		\$31,250

## BALANCE SHEET DATA

	Dec 31, 1952		Dec 31, 1953	
Cash		\$ 13,250		\$ 5,500
Accounts Receivable	\$29,900		\$24,575	
Less Allowance for Bad Debts	900	29,000	875	23,700
Inventories		52,000		40,000
Supplies		750		1,000
Prepaid Expenses		1,250		1,600
Outside Investments		25,000		—
Land		30,000		30,000
Buildings	\$80,000		\$86,000	
Less Allowance for Depreciation	22,000	58,000	22,500	63,500
Machinery and Equipment	\$55,000		\$60,000	
Less Allowance for Depreciation	12,500	42,500	14,000	46,000
Office Equipment	\$ 7,500		\$ 8,000	
Less Allowance for Depreciation	1,800	5,700	1,200	6,800
Discount on Bonds		2,000		—
		<u>\$259,450</u>		<u>\$218,100</u>
Accrued Expenses and Taxes	\$ 700		\$ 6,200	
Notes Payable	8,000		5,000	
Accounts Payable	17,500		20,400	
Bonds Payable	50,000		—	
Capital Stock (Par \$10)	100,000		127,500	
Paid-In Surplus	26,000		23,000	
Earned Surplus	57,250		11,000	
Reserve for Contingencies	—		25,000	
		<u>\$259,450</u>		<u>\$218,100</u>

Explanations of account balance changes follow:

Outside investments were sold during the year. A part of the buildings was rebuilt and enlarged, the following entry being made:

Buildings	6,000	
Allowance for Depreciation of Buildings	4,000	
Cash		10,000

Depreciation of buildings for the year was reported at \$4,500. Machinery was traded in for new machinery, the following entry being made:

Machinery and Equipment	12,000	
Depreciation of Machinery and Equipment	500	
Allowance for Depreciation of Machinery and Equipment	4,500	
Loss on Trade of Machinery	1,000	
Machinery and Equipment		7,000
Cash		11,000

Depreciation of machinery and equipment for the year was reported at \$6,500. Fully depreciated office equipment of \$1,500 was written off against the allowance. Additional office equipment was acquired during the year. Depreciation of office equipment for the year was \$900. Bond discount amortization of \$500 was recorded before bonds were called in.

at 105. Fifteen hundred shares of stock were acquired at 12 and canceled; a stock dividend of one share for two was subsequently issued. A reserve for contingencies was set up during the year as a result of pending lawsuits.

*Instructions:* Prepare working papers and a statement of application of funds.

28-6. A comparative balance sheet for the Clark Corporation appears as follows:

	DECEMBER 31	
	1952	1953
Cash.....	\$ 135,000	\$ 210,000
Marketable securities.....	120,000	80,000
Accounts and notes receivable, less allow- ances for bad debts.....	220,000	250,000
Inventories.....	300,000	360,000
Investments in stock of subsidiary companies (at cost).....	335,000	240,000
Plant and equipment, less allowance.....	800,000	1,020,000
Patents and goodwill.....	140,000	36,000
Bond discount and expense.....	30,000	21,600
	<u>\$2,080,000</u>	<u>\$2,217,600</u>
Miscellaneous accrued liabilities including taxes.....	\$ 65,000	\$ 85,000
Accounts and notes payable.....	145,000	180,000
4% Mortgage bonds.....	500,000	400,000
Preferred stock (par \$25, each share con- vertible into two shares of common).....	250,000	210,000
Common stock (par value \$10).....	300,000	432,000
Paid-in surplus.....	200,000	258,000
Earned surplus.....	620,000	652,600
	<u>\$2,080,000</u>	<u>\$2,217,600</u>

An analysis of balance sheet changes discloses the following:

- Stock owned in the Taylor Co., a partially owned subsidiary, was sold for \$185,000. Stock had originally cost \$95,000.
- The entire goodwill of \$100,000 was written off the books in 1953.
- The patents had a remaining life of ten years on December 31, 1952, and are being written off over this period.
- Mortgage bonds mature on January 1, 1963. On July 1, 1953, bonds of \$100,000 were purchased on the market at 103½ and formally canceled. The loss on bond retirement was charged to Earned Surplus.
- The decrease in preferred stock outstanding resulted from the exercise of the conversion privilege by preferred stockholders.
- 10,000 shares of common stock were sold during the year at \$15.

- (g) During the year equipment that cost \$60,000 and that had a book value of \$12,000 was sold for \$8,600. Depreciation of \$64,000 was taken during the year on buildings and equipment. Additional changes in the plant and equipment balance resulted from the purchase of equipment.
- (h) The net income for the year transferred to earned surplus was \$105,200.
- (i) Dividends paid during the year totaled \$50,000.

*Instructions:* Prepare working papers and a statement of application of funds.

**28-7.** A comparative balance sheet for The Morgan Corporation appears as follows:

	December 31		Increase (or decrease) of working capital, etc.
	1952	1953	
<b>Current and working assets:</b>			
Cash.....	\$ 40,000	\$ 102,800	\$ 62,800
Bid deposits.....	—	100,000	100,000
Estimates receivable.....	380,000	450,600	70,600
Miscellaneous receivables.....	45,650	65,800	20,150
U. S. Treasury tax anticipation notes.....	100,000	10,000	(90,000)
Supplies.....	20,100	22,800	2,700
Insurance policy cash-surrender values (less loans).....	10,000	25,050	15,050
Postwar excess-profit refund.....	18,000	40,000	22,000
	<u>\$ 613,750</u>	<u>\$ 817,050</u>	<u>\$203,300</u>
<b>Less: Current liabilities:</b>			
Notes payable.....	\$ 150,000	\$ 50,000	\$100,000
Accounts payable.....	190,000	215,000	(25,000)
Accrued liabilities.....	18,400	30,900	(12,500)
Federal income tax accrued.....	150,000	240,000	(90,000)
	<u>\$ 508,400</u>	<u>\$ 535,900</u>	<u>\$(27,500)</u>
<b>Working capital</b> .....	<b>\$ 105,350</b>	<b>\$ 281,150</b>	<b>\$175,800</b>
<b>Plant and equipment</b> .....	<b>\$1,050,200</b>	<b>\$ 806,050</b>	
Less: Allowance for depreciation.....	660,300	303,800	
	<u>\$ 389,900</u>	<u>\$ 502,250</u>	<u>\$112,350</u>
<b>Other assets:</b>			
Investment in stock of Blake Co.—90% owned.....	\$ 170,000	\$ 177,200	\$ 7,200
Treasury stock—bought for \$90,000.....	—	40,000	40,000
Organization expenses.....	12,000	6,000	(6,000)
Unamortized discount on bonds payable.....	9,000	8,000	(1,000)
	<u>\$ 686,250</u>	<u>\$1,014,600</u>	<u>\$328,350</u>
<b>Reserves and capital:</b>			
Reserve for contingencies.....	\$ —	\$ 100,000	\$100,000
Deferred profit on contract.....	—	65,000	65,000
Bonds payable.....	100,000	100,000	—
Capital stock.....	200,000	200,000	—
Earned surplus.....	386,250	549,600	163,350
	<u>\$ 686,250</u>	<u>\$1,014,600</u>	<u>\$328,350</u>

A summary of earned surplus for the year 1953 follows:

Balance, December 31, 1952.....		\$386,250
Add: Net profit (before federal taxes) for the year 1953.....	\$275,000	
Restatement of property and allowance accounts to agree with depreciated cost values established by Treasury Department as at January 1, 1953.....	172,350	447,350
Total .....		\$833,600
Deduct: Dividends declared.....	\$ 25,000	
Provision for federal income and excess profits taxes after refund credit.....	203,000	
Purchase price of treasury stock, \$90,000 in excess of par value, \$40,000.....	50,000	
Organization expense amortized.....	6,000	284,000
Balance, December 31, 1953.....		\$549,600

As of January 1, 1953, the plant and equipment account was reduced \$110,150 and the related allowance account was reduced \$282,500 to agree with adjusted depreciated cost values as of that date as determined by the U. S. Treasury Department. During 1953 equipment having a gross book value of \$354,000 and a net book value of \$235,000 on the revalued basis was sold at a profit of \$42,500. Additions and depreciation constitute the remaining changes in the respective accounts.

The investment in stock of Blake Co. account was adjusted during the year to give effect to subsidiary company earnings of \$20,000 and dividends declared of \$12,000.

*Instructions:* Prepare working papers and a statement of application of funds. (A.I.A. adapted)

28-8. The following information is assembled in the preparation of a statement of application of funds for the Silver Star Company:

#### BALANCE SHEET DATA

	DECEMBER 31	
	1952	1953
Cash.....	\$ 40,409	\$ 30,337
Accounts receivable.....	67,186	65,638
Temporary investments.....	112,500	85,000
Prepaid insurance.....	710	755
Inventories.....	82,164	94,438
Cash surrender value of life insurance policies... .	8,315	9,061
Unamortized bond discount.....	4,305	2,867
Land, buildings, machinery and equipment....	172,778	207,782
	\$488,367	\$495,878

DECEMBER 31		
	1952	1953
Accounts payable.....	\$ 34,081	\$ 31,314
Notes payable to banks.....	40,000	45,000
Accrued interest, taxes, etc.....	12,307	21,263
First-mortgage 4% serial bonds.....	82,000	68,500
Allowance for loss on accounts.....	4,630	3,815
Allowance for depreciation.....	96,618	81,633
Allowance for inventory loss.....	1,000	7,500
Reserve for contingencies.....	37,500	63,600
Common stock, \$100 par value.....	100,000	92,500
Paid-in surplus.....	11,000	10,175
Retained earnings.....	69,231	70,578
	<u>\$488,367</u>	<u>\$495,878</u>

The following information concerning the transactions is available:

- (1) Net profit for 1953 was shown by the profit and loss statement as \$48,097.
- (2) During the year 75 shares of the capital stock were repurchased at \$111 and were being held in the treasury. Subsequent to the stock reacquisition a 10% cash dividend was paid.
- (3) The 1953 premium on life insurance policies was \$1,673. Expense was charged with \$927 of this payment.
- (4) Machinery was purchased for \$31,365 and machinery costing \$32,625 was retired. The retired machinery had accumulated depreciation of \$29,105 at date of retirement. It was sold as scrap for \$1,000, which was credited against the profit and loss on retirement of asset account. The remaining increase in fixed assets resulted from construction of a building.
- (5) The serial bonds mature at the rate of \$5,000 per year. In addition to the retirement of the \$5,000 of bonds due in 1953, the company purchased and retired \$8,500 of the bonds at \$103. Both the premium on retirement and the applicable discount were charged to expense.
- (6) The allowance for inventory loss was created by a charge to expense in each year. It is set up to reduce the inventory value of obsolete items to estimated market value. Bad accounts of \$3,702 were written off against the allowance for loss on accounts.
- (7) The reserve for contingencies was provided by charges against retained earnings. A debit to the reserve of \$11,400 was made during the year. This represented the final settlement of a part of 1950 income tax liability which had been the subject of controversy.

*Instructions:* Prepare working papers and a statement of application of funds. (A.I.A. adapted)

**28-9.** The Cold River Corporation finds that it is unable to pay a year-end cash dividend without borrowing. However, its profits for the year 1953, shown by its books as \$83,485, were the largest in its history of operations. Some of the directors are puzzled as to the reason for the small cash balance and weak current position. The accounts have not been audited, but the company management engages you to assist them in preparing an explanation of the situation for the directors. As a part of your engagement you

are to prepare a formal statement showing source and application of funds, accepting their profit figure of \$83,485 as a starting point. The following information is available:

TRIAL BALANCES

ACCOUNTS	POST-CLOSING 12/31/52		PRE-CLOSING 12/31/53	
	DEBIT	CREDIT	DEBIT	CREDIT
Cash.....	\$ 25,000		\$ 5,000	
Accounts receivable.....	18,000		20,000	
Allowance for loss on accounts.....		\$ 1,500		\$ 1,800
Installment notes receivable.....			25,000	
Inventory of materials.....	30,000		22,000	
Inventory of finished goods.....	19,000		13,000	
Inventory of supplies.....	2,000		2,500	
Investment in Blake Co. (50% of stock).....	42,500		47,275	
Land used in business.....	10,000		25,000	
Land not used in business.....	20,000			
Buildings.....	90,000		90,000	
Allowance for depreciation of buildings.....		60,000		36,100
Machinery.....	170,000		191,000	
Allowance for depreciation of machinery.....		80,000		72,050
Goodwill and patents.....	14,000		17,000	
Bond discount unamortized.....	3,000		2,160	
Prepaid insurance.....	1,000		1,500	
Accounts payable.....		48,000		47,500
Notes payable.....		10,000		15,000
Accrued liabilities.....		15,000		18,000
Bonds payable — 4%.....		50,000		40,000
Reserve for future inventory price declines.....		10,000		2,000
Reserve for contingencies.....		10,000		5,000
Reserve for preferred stock retirement.....		15,000		5,000
Preferred stock — 6%, \$100 par.....		25,000		25,000
Common stock — \$100 par.....		100,000		100,000
Treasury stock — common — 100 shares.....			10,000	
Surplus.....		20,000		20,500
Sales (net).....				188,000
Cost of goods manufactured and sold.....			142,000	
Selling and general expense.....			28,075	
Bond interest and discount.....			2,040	
Federal income tax expense.....			5,600	
Loss on disposal of assets.....			3,000	
Gain in value of assets.....				25,000
Reduction of depreciation allowance.....				45,000
Dividends and profits of Blake Co.....				6,900
Miscellaneous income and expense.....			700	
	<u>\$444,500</u>	<u>\$444,500</u>	<u>\$652,850</u>	<u>\$652,850</u>

Explanations of changes in certain of the accounts have been obtained. They show:

- (1) Provision for loss on accounts was  $\frac{1}{2}$  of 1% of net sales, which was charged to selling expense and credited to the allowance. Recoveries amounted to \$500, which were netted against the expense.
- (2) Investment in Blake Co. has been debited with 50% of the profit of Blake Co. and credited with a cash dividend of \$2,125 received. The contra entries have been to Dividends and Profits of Blake Co. and to Cash.
- (3) An appraisal was made of fixed assets as of January 1, 1953. It was as follows:

	UNDEPRECIATED VALUE	DEPRECIATION	NET VALUE
Land used in business	\$ 25,000		\$ 25,000
Land not used in business	30,000		30,000
Buildings	140,000	\$ 85,000	55,000
Machinery and equipment	210,000	100,000	110,000
Total	<u>\$405,000</u>	<u>\$185,000</u>	<u>\$220,000</u>

This appraisal was recorded by the following entry:

Land Used in Business	\$ 15,000	
Land Not Used in Business	10,000	
Allowance for Depreciation of Buildings	25,000	
Allowance for Depreciation of Machinery	20,000	
Gain in Value of Assets		\$ 25,000
Reduction of Depreciation Allowance		45,000

The land not used in the business was subsequently sold for \$27,000, payable \$2,000 in cash and the remainder in notes due in equal annual payments over a five-year period starting 7/1/54. The \$3,000 difference between the sale price and the \$30,000 undepreciated value was debited to Loss on Disposal of Assets. Depreciation, computed on an acceptable basis, was charged to expense of the year in the amount of \$13,150. Purchase of new machinery in the amount of \$21,000 was made for cash.

- (4) The company charged \$5,000 of research and patent expenditures to the goodwill and patents account and amortized against manufacturing cost the amount of \$2,000 of the previous balance.
- (5) The company wrote off to Bond Interest and Discount one fifth of the bond discount upon retirement of \$10,000 of the bonds at 94 on July 1, 1953. The regular amortization and the result of the bond retirement, including profit, have been included in the bond interest expense.
- (6) The company had \$9,000 liability for income taxes included in the accrued liabilities as of 12/31/52. However, only \$4,000 was paid; therefore \$5,000 was credited to Surplus and current expense was charged with the estimated expense for 1953.
- (7) Because of price declines during the year, \$8,000 of the Reserve for Future Inventory Price Declines was utilized by a credit to Cost of Goods Sold.
- (8) During the year the company paid a \$5,000 award rendered against them in a suit. The charge was to the Reserve for Contingencies that had been created in 1952 because of this and other pending suits.
- (9) During the year the company purchased 100 shares of its own preferred stock for \$11,000. It charged \$10,000 to the preferred stock retirement reserve account and \$1,000 to Surplus. It has charged Surplus with \$1,500 of preferred dividends paid and credited Miscellaneous Income with the \$300 that it kept because it owned 100 shares of the stock.
- (10) During the year the company reacquired 100 shares of its own common stock for \$12,000. It charged the \$2,000 excess over par to Surplus.

*Instructions:* Prepare working papers and a statement of application of funds. (A.I.A. adapted)

**28-10.** The Reynold Corporation's condensed statements of income for the fiscal year 1953 and of financial position at the beginning and end of the fiscal year, together with other pertinent data, are reproduced on this and the following page.

The board of directors of the corporation recognizes that the readers of the corporation's report to stockholders may be puzzled by the fact that, despite a substantial "net income after taxes," the cash balance decreased and the corporation resorted to some long-term borrowing. Accordingly, the directors have requested that you prepare a statement that will reveal clearly the flow of cash into and out of The Reynold Corporation during the past fiscal year and that will indicate why operations alone did not provide sufficient cash for the corporation's needs.

You have decided that the statement should be constructed to show the cash disbursements other than for operations, the net cash provided

THE REYNOLD CORPORATION  
COMPARATIVE STATEMENT OF FINANCIAL POSITION  
DECEMBER 31, 1952 AND 1953

	1953	1952	INCREASE OR DECREASE*
<b>Current assets:</b>			
Cash	\$ 215,221	\$ 225,351	\$ 10,130*
Marketable securities, at cost	180,767	251,388	70,621*
Receivables — trade, less estimated uncollectibles	266,559	195,991	70,568
Inventories (at cost)	322,438	359,175	36,737*
Prepaid operating expenses	15,209	17,894	2,685*
<b>Total current assets</b>	<b>\$1,000,194</b>	<b>\$1,049,799</b>	
<b>Less: Current liabilities:</b>			
Accounts and notes payable — trade	\$ 108,623	\$ 254,181	145,558*
Accrued wages and salaries	12,602	11,495	1,107
Accrued estimated taxes	295,580	299,466	3,886*
Dividends payable	23,726	25,591	1,865*
Accrued interest payable	750	296	454
Other accrued operating expenses	12,622	14,942	2,320*
<b>Total current liabilities</b>	<b>\$ 453,903</b>	<b>\$ 605,971</b>	
<b>Working capital</b>	<b>\$ 546,291</b>	<b>\$ 443,828</b>	
Property, plant, and equipment — less amount of cost charged to operations to date	1,356,132	1,200,816	155,316
<b>Total assets, less current liabilities</b>	<b>\$1,902,423</b>	<b>\$1,644,644</b>	
Deduct: Long-term bank loans	50,000	—	50,000
<b>Net assets</b>	<b>\$1,852,423</b>	<b>\$1,644,644</b>	<b>\$207,779</b>
<b>Stockholders' Equity:</b>			
Preferred stock, 6% cumulative, par value \$100 (2,602 shares)	\$ 260,200	\$ 265,200	\$ 5,000*
Common stock — par value \$100 (12,724 shares)	1,272,400	1,092,300	180,100
Amount paid in — in excess of par value	61,524	42,043	19,481
Retained earnings	258,299	245,101	13,198
<b>Total . . . . .</b>	<b>\$1,852,423</b>	<b>\$1,644,644</b>	<b>\$207,779</b>

**THE REYNOLD CORPORATION**  
**INCOME STATEMENT**  
**YEAR ENDED DECEMBER 31, 1953**

<b>Income:</b>		
Gross operating income		\$2,410,655
Nonoperating income, including dividends and interest		21,708
Total income		<u>\$2,432,363</u>
<b>Deductions:</b>		
Operating charges:		
Materials and supplies used	\$870,531	
Wages and salaries	906,387	
Provision for depreciation charged to operations	114,079	
Taxes, other than federal income	26,221	
Other operating charges	33,762	
Interest charges	1,297	
Loss on investments	6,016	
Estimated federal income tax	284,442	2,242,735
Net income (after taxes)		<u>\$ 189,628</u>

by operations, the amount by which operations failed to provide sufficient cash, and the manner in which this deficiency was met.

The following additional information is available:

- (1) During the year, marketable securities were purchased at a cost of \$24,692.
- (2) The "estimated uncollectible receivables" increased \$11,448, despite the write-off of \$2,605 of bad accounts. During the year, an account of \$2,000, written off in a prior year, was recovered; the credit was made to Recovery of Bad Debts, which was netted against "other operating charges" in the income statement.
- (3) During the year, 50 shares of preferred stock were reacquired by purchase at a 9% premium. These shares were canceled, at which time the excess of the purchase price over the average amount originally contributed for these shares (\$105 per share) was debited to Retained Earnings.
- (4) The only entries in the retained earnings account for the year were for net income, dividend declaration, and cancellation of preferred stock.
- (5) There were no sales or retirements of fixed assets during the year.

*Instructions:* Prepare the "Cash Flow" statement (statement of source and application of cash) supported by a schedule showing the conversion of the income statement to a cash basis, item by item. This schedule should show the amount of cash produced or used as a result of each item on the statement. Use the following column headings in this schedule:

PER INCOME STATEMENT	ADJUSTMENTS TO		CASH RESULT
	CASH BASIS		
	ADD	DEDUCT	

(A.I.A. adapted)

## **APPENDIX**

Statements for several well-known representative corporations are found on the pages that follow. Company statements of financial condition and operations together with accompanying statement notes as presented in the corporate annual reports are reproduced. These statements illustrate practical applications of contemporary accounting standards and concepts.

A summary is presented preceding each set of statements pointing out matters of particular interest in viewing the statements. The forms, procedures, and items that are pointed out are not necessarily examples of good reporting or unsatisfactory reporting; rather, these are matters of interest that call for evaluation in terms of the accounting framework as a whole as developed in the text.

Reference to the statements and statement items may be made throughout the course as various phases of statement structure, form, and content are considered.

Statements are included for the following companies:

- (1) United States Steel Corporation
- (2) Caterpillar Tractor Co.
- (3) The Pennsylvania Salt Manufacturing Company
- (4) Armour and Company
- (5) American Telephone and Telegraph Company
- (6) Lockheed Aircraft Corporation
- (7) The Atchison, Topeka and Santa Fe Railway Company
- (8) Granite City Steel Company

## UNITED STATES STEEL CORPORATION

The following features are of interest in viewing the financial statements and accompanying notes taken from the 1952 annual report of the United States Steel Corporation.

Two financial statements for the year are presented under the headings Consolidated Statement of Income and Consolidated Statement of Financial Position. Statements are presented in comparative form. Financial statements are supplemented by a Summary of Financial Operations which is also reproduced.

**Consolidated Statement of Financial Position.** The statement of financial position develops a working capital balance and then reports noncurrent assets followed by noncurrent liabilities and reserves in developing an excess of assets over liabilities and reserves. These data are followed by a summary of the ownership interest. Reserves including those created as a result of self-insurance against fire, windstorm, marine, and related losses (see notes to accounts) are excluded from the ownership equity. The preferred stock interest is presented at par, and the common stock interest is presented at the stated capital for common, \$33 $\frac{1}{3}$  per share, plus the income reinvested in the business.

**Consolidated Statement of Income.** The income statement is prepared in single-step form, a summary of income items being followed by all expense items. The statement proceeds beyond the net income determination, by reporting the income distributions to stockholders and the resulting balance representing income reinvested in the business. This balance reconciles the change in the common stockholders' equity reported on the comparative statement of financial position.

**Summary of Financial Operations.** Sources and applications of working capital are summarized in the report, Summary of Financial Operations. The net change in working capital is explained and reconciled by means of this report.

**Notes to Accounts.** Notes make reference to such matters as possible additional income tax assessments and the provisions made therefor, self-insurance provisions, stock option plans in effect, and charges for depreciation in the accounts reported in accordance with tax allowances under Certificates of Necessity or under accelerated depreciation plans. "The Independent Auditors' Report" is not reproduced (Price-Waterhouse & Co., Auditors).

**Additional Summaries and Statements.** The 1952 annual report for the United States Steel Corporation presents additional summaries and statements that are not reproduced here, including: a summary of operations for each year, 1910-1952; a summary of production, shipments, and employment data for 1910-1952; and detail in support of certain balances reported on the statement of financial position, including plant and equipment, reserves, inventory, and long-term debt data.

## UNITED STATES STEEL CORPORATION

# CONSOLIDATED STATEMENT OF *Financial Position*

	Dec. 31, 1952	Dec. 31, 1951
<b>Current assets</b>		
Cash . . . . .	\$ 215,858,965	\$ 233,386,977
United States Government securities, at cost . . . . .	106,441,431	326,717,100
Receivables, less estimated bad debts . . . . .	263,654,872	252,784,015
Inventories (details on page 36) . . . . .	424,752,105	399,832,115
<i>Total</i> . . . . .	<u>1,010,707,373</u>	<u>1,212,720,207</u>
<b>Less</b>		
<b>Current liabilities</b>		
Accounts payable . . . . .	380,120,199	339,703,119
Accrued taxes . . . . .	275,040,163	509,773,477
Dividends payable . . . . .	25,887,237	25,887,237
Long-term debt due within one year . . . . .	3,098,398	2,438,790
<i>Total</i> . . . . .	<u>684,151,997</u>	<u>877,802,623</u>
<b>Working capital</b> . . . . .	326,555,376	334,917,584
Miscellaneous investments, less estimated losses . . . . .	21,052,134	19,779,076
United States Government securities set aside, at cost		
For property additions and replacements . . . . .	19,000,000	250,000,000
For expenditures arising out of war . . . . .	8,000,000	12,000,000
Plant and equipment, less depreciation (details on page 35) . . . . .	1,851,572,655	1,571,334,234
Operating parts and supplies . . . . .	54,357,497	48,317,344
Costs applicable to future periods . . . . .	23,745,096	26,528,130
Intangibles . . . . .	<u>1</u>	<u>1</u>
<b>Total assets less current liabilities</b> . . . . .	2,304,282,759	2,262,876,369
<b>Deduct</b>		
Long-term debt (details on page 36) . . . . .	61,007,129	54,879,636
Reserves (details on page 35)		
For estimated additional costs arising out of war . . . . .	7,096,110	11,576,348
For insurance, contingencies and miscellaneous expenses . . . . .	100,061,875	100,441,541
<b>Excess of assets over liabilities and reserves</b> . . . . .	<u>\$2,136,117,645</u>	<u>\$2,095,978,844</u>
<b>Ownership evidenced by</b>		
Preferred stock, 7% cumulative, par value \$100 (3,602,811 shares) . . . . .	\$ 360,281,100	\$ 360,281,100
Common stock (26,109,756 shares) . . . . .	1,775,836,545	1,735,697,744
Stated capital, \$33⅓ per share . . . . .	\$870,325,200	
Income reinvested in business (see page 31 for addition of \$10,138,801 in 1952) . . . . .	905,511,345	
<i>Total</i> . . . . .	<u>\$2,136,117,645</u>	<u>\$2,095,978,844</u>

## UNITED STATES STEEL CORPORATION

# CONSOLIDATED STATEMENT OF *Income*

	1952	1951
<b>Products and services sold</b> . . . . .	\$3,137,397,336	\$3,524,121,226
<b>Costs</b>		
<b>Employment costs</b>		
Wages and salaries . . . . .	1,176,596,946	1,217,611,480
Pensions, social security taxes, insurance and other employee benefits ( <i>details on page 18</i> ) . . . . .	145,477,678	156,857,438
	<u>1,322,074,624</u>	<u>1,374,468,918</u>
Products and services bought . . . . .	1,312,062,864	1,329,670,316
Wear and exhaustion of facilities . . . . .	176,918,467	162,091,475
War costs included herein provided for in prior years, less associated Federal income tax adjustments . . . . .	4,480,238	1,750,925
Interest and other costs on long-term debt . . . . .	1,862,068	1,969,626
State, local and miscellaneous taxes . . . . .	68,271,805	75,312,029
Estimated Federal taxes on income ( <i>details on page 5</i> ) . . . . .	117,000,000	398,000,000
<b>Total</b> . . . . .	<u>2,993,709,590</u>	<u>3,339,761,439</u>
<b>Income</b> . . . . .	143,687,746	184,359,787
<b>Dividends declared</b>		
On cumulative preferred stock ( <i>\$7 per share</i> ) . . . . .	25,219,677	25,219,677
On common stock ( <i>\$3 per share</i> ) . . . . .	<u>78,329,268</u>	<u>78,329,268</u>
<b>Income reinvested in business</b> . . . . .	<u>\$ 40,138,801</u>	<u>\$ 80,810,842</u>

## UNITED STATES STEEL CORPORATION

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# SUMMARY OF 1952 *Financial Operations*

**Additions to working capital**

Income . . . . .	\$143,687,746
<i>Add—Non cash costs in current year</i>	
Wear and exhaustion of facilities . . . . .	176,918,467
Proceeds from sales and salvage of plant and equipment . . . . .	12,004,915
Proceeds from purchase money obligations less long-term debt retire <sup>1</sup> . . . . .	<u>6,787,101</u>
Total additions . . . . .	339,398,229

**Deductions from working capital**

Expended for plant and equipment . . . . .	\$469,161,803
Less—Use of funds set aside in prior years . . . . .	<u>231,000,000</u>
	238,161,803
Miscellaneous deductions . . . . .	6,049,689
Dividends declared on preferred and common stocks . . . . .	<u>103,548,945</u>
Total deductions . . . . .	<u>347,760,437</u>
Reduction in working capital . . . . .	<u><u>\$ 8,362,208</u></u>

**Working capital per consolidated statement  
of financial position**

December 31, 1952 . . . . .	\$326,555,376
December 31, 1951 . . . . .	<u>334,917,584</u>
Reduction . . . . .	<u><u>\$ 8,362,208</u></u>

## UNITED STATES STEEL CORPORATION

NOTES TO *Accounts***Federal Taxes on Income**

The Bureau of Internal Revenue has not completed the audit of Federal income and excess profits tax returns for 1942 and subsequent years. It is believed that reasonable provision has been made for any additional taxes which may be levied.

**Securities Set Aside for Property Additions and Replacements**

Of the \$250,000,000 of segregated funds invested in U.S. Government securities at December 31, 1951, \$231,000,000 was used in 1952 for property additions and replacements, leaving a balance of \$19,000,000.

**Plant and Equipment**

The amount at which plant and equipment is shown in the consolidated statement of financial position represents acquisition cost less that portion thereof which has been deducted as wear and exhaustion expense. This amount does not purport to be a realizable or replacement value.

**Reserve for Estimated Additional Costs Arising out of War**

Of the reserve for estimated additional costs arising out of war provided during World War II, \$4,480,238 was used in 1952 to cover the higher costs of replacing inventories depleted during the war. This charge and offsetting credit are included in the consolidated statement of income.

**Insurance Reserve**

U.S. Steel is, for the most part, a self-insurer of its assets against fire, wind-torn, marine and related losses. The balance of the insurance reserve is held available for absorbing possible losses of this character, and is considered adequate for this purpose.

**Common Stock**

The Stock Option Incentive Plan, approved by stock holders May 7, 1951, authorized the option and sale of up to 1,300,000 shares of common stock to key management employees, such shares to be made available from authorized unissued or reacquired common stock. No options to purchase stock were issued or exercised during 1952. At December 31, 1952, 304 employees held options to purchase a total of 373,950 shares at \$41 per share.

**Products and Services Sold**

Products and services sold includes interest, divi-

dends and other income of \$5,665,474 in 1952 and \$14,421,675 in 1951.

**Wages and Salaries**

Wages and salaries totaled \$1,207,943,140 in 1952. Of this amount, \$1,176,596,946 was included in costs of products and services sold and the balance was charged to construction and other accounts.

**Products and Services Bought**

Products and services bought reflects the changes during the year in inventories and deferred costs. These items increased during 1952 approximately \$28,000,000.

**Wear and Exhaustion of Facilities**

Wear and exhaustion of facilities includes accelerated depreciation as follows:

	1952	1951
Amount presently deductible for Federal income tax purposes (amortization of emergency facilities) . . . . .	\$46,219,552	\$12,794,855
Amount not presently deductible for Federal income tax purposes . . . . .	21,637,772	40,366,211
Total . . . . .	<u>\$67,857,324</u>	<u>\$53,161,066</u>

The accelerated depreciation is applicable to the cost of postwar facilities in the first few years of their lives when the economic usefulness is greatest. The amount thereof is related to the excess of current operating rate over U.S. Steel's long-term peacetime average rate of about 70 per cent of capacity. The annual accelerated amount is 10 per cent of the cost of facilities in the year in which the expenditures are made and 10 per cent in the succeeding year, except that the portion of this amount in excess of amortization of emergency facilities is reduced ratably as the operating rate may drop, no acceleration being made at 70 per cent or lower operations. The portion other than amortization is in addition to the normal depreciation on such facilities but the total depreciation over their expected lives will not exceed the cost of the facilities.

Under the Internal Revenue Code that portion of the cost of facilities certified by the Defense Production Administration as essential to the defense effort is covered by a Certificate of Necessity and can be written off for tax purposes at the rate of 20 per cent per year. This more rapid depreciation is generally referred to as amortization of emergency facilities.

**CATERPILLAR TRACTOR CO.**

The following features are of particular interest in viewing the financial statements and accompanying notes taken from the 1952 annual report for the Caterpillar Tractor Co.

Two financial statements for the year are presented under the headings, "Results of Operations" and "Financial Position."

**Statement of Financial Position.** The statement of financial position develops a working capital total or "net current assets," and then proceeds to determine total net assets by adding noncurrent assets and subtracting noncurrent liabilities. The statement then summarizes the ownership interest consisting of preferred and common stock, capital in excess of par value, and profit employed in the business. The basis of valuation for each asset is indicated. Intangibles are reported on the statement at a nominal amount of \$1.

**Statement of Results of Operations.** The combined income and earned surplus form is used in developing the statement of "Results of Operations." Note on the statement the reference to retained earnings as "Profit employed in the business."

**Notes to Financial Statements.** Notes to financial statements explain fully the inventory valuation procedures and the effects of such procedures. Reference is also made to the recognition of depreciation at cost and to the effects of such a policy on income determination in view of higher current replacement values for assets. Notes also provide a full description of preferred stock, stock retirement provisions and operation, and stock option plans in current operation.

**Additional Summaries and Statements.** It should be observed that statements referred to report data for only the current year. However, the annual report for 1952 also provides the following summaries and statements not reproduced here: Statement (3) — a summary of changes in ownership equities — stock issues, capital in excess of par value, and profit employed in the business since incorporation in 1925; Statement (4) — a comparative statement of the results of operations for a ten-year period; Statement (5) — a comparative summary of the source of current assets (source and application of funds data) for a ten-year period; Statement (6) — a comparative statement of the financial position for a ten-year period; Statement (7) — a comparative summary of buildings, machinery, and equipment and accumulated depreciation at the end of each year for a ten-year period.

**Independent Auditors' Report.** The auditors' report in this instance covers not only the annual reports but also the summaries for prior years mentioned above.

INTERMEDIATE ACCOUNTING  
CATERPILLAR TRACTOR CO.  
and U. S. subsidiary

statement 2

**Financial Position December 31, 1952**

**Current assets:**

Stated on basis of realizable values:

Cash .....	\$ 14,522,385
Receivable from customers and others .....	38,317,711
	<u>\$ 52,840,096</u>

Stated at cost principally using "last in, first out" method

Inventories .....	105,501,835
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\$158,341,931

**Deduct: Current liabilities:**

Payable to material suppliers and others .....	\$ 31,579,608
Federal income and excess profits taxes .....	47,256,315
Less: United States government securities .....	<u>(30,869,414)</u>

47,966,509

Net current assets (statement 5) .....

\$110,375,422

Prepaid insurance, etc.—cost allocable to future operations .....

216,982

Buildings, machinery and equipment—balance of original cost allocable

to future operations (statement 7) .....

90,351,116

Land—at original cost .....

3,563,236

Investment in and advances to wholly owned British subsidiary .....

1,055,801

Patents, trade-marks and other intangibles—at nominal amount .....

1

\$205,562,558**Deduct:**

Ten-year 2% debentures due 1956 .....	\$ 18,033,000
Notes payable—3½%, due annually 1964-1972 .....	<u>35,000,000</u>

53,033,000

Net assets .....

\$152,529,558**Ownership equities (statement 3):**

Preferred stock—4.20% cumulative:

240,000 shares of \$100 par value .....

\$ 24,000,000

**Common stock:**

3,819,012 shares of \$10 par value .....	\$ 38,190,120
Capital in excess of par value .....	1,681,950
Profit employed in the business .....	<u>88,657,488</u>

128,529,558

\$152,529,558

**CATERPILLAR TRACTOR CO.**  
and U S subsidiary

statement 1

---

**Results of Operations    Year 1952**

---

**Sales** **\$477,577,014**

**Costs:**

Inventories brought forward from last year \$114,165,611

Materials supplies services purchased etc 251 814 222

Wages salaries company contributions for group insurance pens on plan  
unemployment insurance and old age benefits 137 785 886

Portion of original cost of buildings machinery and equipment allocated to  
operations (depreciation and amortization) 10 564 547

Interest on borrowed funds 1 640 523

Federal income and excess profits taxes 44 990 000

\$560 960 789

Deduct Inventories carried forward to next year 105 501 835

Costs allocated to year

455 458 954

**Profit for year** **\$ 22,118,060**

**Add**

Profit employed in the business at beginning of year 79,018 903

\$101 136,963

Deduct Dividends paid in cash during year

Preferred stock—\$4 20 per share \$ 1,023,750

Common stock—\$3 00 per share 11,455,725

12,479,475

**Profit employed in the business at end of year** **\$ 88,657,488**

**CATERPILLAR TRACTOR CO.**

and U. S. subsidiary

**Notes to Financial Statements****1. Basis of stating inventories**

Inventories are stated with minor exceptions, on the basis of the "last in, first out" method of inventory accounting adopted for federal income tax purposes January 1, 1950. This is a generally accepted accounting method designed to allocate incurred costs in such a manner as to relate them to revenues more nearly on the same cost price level basis than would the "first in, first out" method used prior to 1950. The general effect is to exclude from reported profits a major portion of the increases in inventory costs which result from rising cost levels.

Accordingly, the quantities of inventories at December 31, 1952, equivalent to the quantities at January 1, 1950, are stated at cost levels prevailing at that earlier date. Quantities at December 31, 1952, in excess of those at January 1, 1950, are stated on the basis of the earliest costs incurred in the year in which the quantities increased.

**2. Basis of allocating cost of facilities to operations**

The generally accepted accounting principle followed with respect to buildings, machinery and equipment is the systematic allocation to each year's operations of a portion of the original cost of these facilities. The plant assets currently in use by the Company were, however, acquired over many years at cost levels which varied from year to year and which were lower than the levels of current costs. The portion of the original cost of these assets allocated to 1952 and used in determining profit was therefore substantially lower than it would have been if the allocation had been made on the basis of current replacement cost levels.

**3. Capital stock**

The authorized capital stock of the Company consists of 350,000 shares of \$100 par value cumulative preferred stock issuable in two or more series and 5,000,000 shares of \$10 par value common stock. The issued capital stock consists of 250,000 shares of cumulative preferred stock of which 240,000 shares are outstanding, and 3,819,012 shares of common stock, all of which are outstanding.

The annual dividend rate for the outstanding shares of cumulative preferred stock is 4.20%. Should any additional shares of cumulative preferred stock be issued, the dividend rate on such additional shares would be established by the Board of Directors prior to their issuance.

A sinking fund provision requires, in general, the retirement each year of 2% of the greatest number of shares of preferred stock previously issued. In accordance with this provision 5,000 shares of preferred stock were retired in each of the years 1951 and 1952.

A restricted stock option plan was adopted by the shareholders during the year. Under this plan 150,000 shares of authorized but unissued common stock were reserved for issue to officers and other key employees at not less than 95% of the market price at the time of granting the option. Options were granted on January 30, 1952, for 20,101 shares at \$47.50 per share, equal to 95% of the market price of \$50.00 per share on that date. The option period is three years from the date of granting the option as to 50% of the shares subject to each option and seven years from the date of granting the option as to the other 50% of the shares subject to each option. Options for 532 shares had been exercised by December 31, 1952.

**Independent Auditors' Report**

To the Shareholders:

In our opinion, the accompanying financial statements present fairly the position of Caterpillar Tractor Co. and its wholly owned subsidiary, Trackson Company, at December 31, 1952, and the results of their operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. This opinion is based on an examination of the statements which was made in accordance with generally accepted auditing standards and included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We have made annual examinations of the accounts of the Company since incorporation and, in our opinion, statements 3 through 7 present fairly the historical financial data included therein.

CHICAGO, JANUARY 19, 1953

*Price Waterhouse & Co.*

## THE PENNSYLVANIA SALT MANUFACTURING COMPANY

The following features are of interest in viewing the financial statements and accompanying notes taken from the 1952 annual report of the Pennsylvania Salt Manufacturing Co.

Four financial statements for the year are presented under the headings Consolidated Balance Sheet, Consolidated Statement of Earnings, Statement of Amounts Paid In for Stock in Excess of Par Value, and Statement of Accumulated Earnings Retained and Employed in Business. Statements are presented in comparative form. Financial statements are accompanied by several supplementary statements reproduced here: (1) Disposition of Net Income, (2) Source and Disposition of Working Capital, and (3) 15 Year Review. Another report, Summary of Funds Employed in Business, is not reproduced.

**Consolidated Balance Sheet.** The balance sheet is prepared in the conventional account form. The balance sheet makes reference to inventory valuation procedure. U. S. government tax notes are applied against federal income taxes payable in arriving at the taxes payable balance. Full data are given concerning long-term debt and capital stock authorized and outstanding.

**Statement of Consolidated Earnings.** The earnings summary is prepared in multiple-step form with designations for (1) net operating earnings, (2) net earnings before income taxes, (3) net earnings before minority interest, and (4) net earnings for year.

**Statement of Amount Paid In for Stock in Excess of Par Value.** Comparative balances in "Amount Paid In for Stock in Excess of Par Value" on the balance sheet are reconciled by reporting this balance as of the beginning of the year, increases arising from the issue of stock on its sale and exchange, and decrease represented by costs incurred in the sale of stock.

**Statement of Accumulated Earnings Retained and Employed in Business.** Comparative balances in "Accumulated Earnings Retained and Employed in Business" as reported on the balance sheet are reconciled by reporting this balance as of the beginning of the year, the increase from earnings for the year, and decreases from dividends and nonrecurring charges. The auditors' certificate is not reproduced (Edw. A. Coughlan & Co., Auditors).

**Disposition of Total Income.** A comparative summary is provided showing how the income from sales for the year was applied to business uses.

**Source and Disposition of Working Capital.** Sources and applications of working capital are listed in detail. The net change in working capital for the year is thus fully explained and reconciled.

**15 Year Review.** A summary of significant financial data and relationships is presented in comparative form for a 15-year period, 1938-1952. Among data presented are: working capital, fixed asset, long-term debt, and capital totals; sales and net income totals; per cent earnings on sales and share owners' investment; common stock per-share earnings; dividends; and average market price of stock outstanding.

**The Pennsylvania Salt**  
**Consolidated**

DECEMBER 31,

ASSETS	1952	1951
<b>Current Assets:</b>		
Cash in Banks and on Hand . . . . .	\$ 3,678,495	\$ 2,642,477
U.S. Government Securities and Municipal Housing Bonds Guaranteed by U.S. Government (at cost, which approximates market) . . . . .	2,282,008	4,313,687
Accounts and Notes Receivable ( <del>Less</del> —Allowance for Doubtful Receivables) . . . . .	6,539,531	6,067,196
Prior Years' Federal Income and Excess Profits Taxes Refundable Inventories (at lower of first-in first-out or standard cost or market, except for inventory items aggregating \$2,192,668 in 1952 and \$2,107,552 in 1951 valued at base cost, last-in first-out)	237,658	135,487
Total 1952—\$13,107,454; 1951—\$14,018,105:		
Finished Goods . . . . .	5,547,402	5,503,038
Goods in Process . . . . .	1,104,803	1,164,388
Raw Materials . . . . .	2,800,066	2,779,319
Supplies . . . . .	3,655,183	4,571,360
<b>Total Current Assets</b> . . . . .	<u>25,845,146</u>	<u>27,176,952</u>
<b>Investments and Other Assets (at cost):</b>		
Investments in Affiliates Not Consolidated . . . . .	144,304	244,304
Miscellaneous Investments and Other Assets . . . . .	27,353	21,301
<b>Total Investments and Other Assets</b> . . . . .	<u>171,657</u>	<u>265,605</u>
<b>Land, Buildings, and Equipment (at cost):</b>		
Land, including Mineral Rights . . . . .	1,955,616	1,856,607
Buildings . . . . .	12,843,671	12,028,138
Equipment . . . . .	48,041,115	41,283,244
	62,840,402	55,167,989
<b>Less—Allowance for Depletion, Depreciation and Amortization</b>	<u>28,212,697</u>	<u>25,993,387</u>
<b>Net Land, Buildings, and Equipment</b> . . . . .	<u>34,627,705</u>	<u>29,174,602</u>
<b>Goodwill, Trademarks, Patents, Etc. (Net of Amortization)</b> . .	<u>60,528</u>	<u>55,672</u>
<b>Deferred Charges</b> . . . . .	<u>1,496,886</u>	<u>1,175,241</u>
<b>TOTAL ASSETS</b>	<u><u>62,201,922</u></u>	<u><u>57,848,072</u></u>
<i>Note: The Consolidated Balance Sheet includes Sharples Chemicals Inc. for both 1952 and 1951.</i>		

**Manufacturing Company****Balance Sheet**

1952 AND 1951

LIABILITIES	1952	1951
<b>Current Liabilities:</b>		
Long-Term Debt—Amounts Due Within One Year	\$ 317 000	\$ 448,000
Accounts Payable, including Trade Acceptances	4,551,729	3,662,105
Federal Income and Excess Profits Taxes Payable, less U S Gov ernment Tax Saving Notes totalling \$1,312,285 in 1952 and \$1,008,700 in 1951	2,105,670	6,563,343
Sundry Taxes and Other Accruals	561,106	622,800
Amounts Payable under Agreements for Purchase of Property	194,540	252,879
Provision for Containers Returnable	319,335	294,789
<b>Total Current Liabilities</b>	<b>8,049,380</b>	<b>11,845,916</b>
<b>Long-Term Debt:</b>		
Note Payable, 3%, maturing July 1 1963, being reduced by an nual sinking fund payments of \$200 000 each	2 300 000	2,500,000
Notes Payable, 3½%, maturing April 1 1964, to be reduced by annual sinking fund payments of \$200 000 each, beginning April 1, 1954	2 500,000	2,500,000
Note Payable, 4%, maturing October 1 1959, being reduced by annual fixed payments of \$100,000 each and annual contingent payments based on earnings	358 000	606,000
	5,158 000	5,606,000
<b>Less—Amounts Due Within One Year, shown under Current Liabilities</b>	<b>317,000</b>	<b>448,000</b>
<b>Net Long-Term Debt</b>	<b>4,841,000</b>	<b>5,158,000</b>
<b>Deferred Liability:</b>		
Employees' Retirement Benefits, payable over future years	1,525,000	1,525,000
<b>Minority Interest in Capital of Consolidated Subsidiary</b>	<b>2 865</b>	<b>416,747</b>
<b>Capital:</b>		
Preferred Stock, \$100 par value, authorized 150 000 shares divi dends cumulative, outstanding none	—	—
Common Stock, \$10 par value, authorized 1,500,000 shares out standing 1952—1,242,799 2 shares, 1951—1,074 410 4 shares, unused shares reserved under stock option plan, 1952—50,000 shares, 1951—none	12,427,992	10,744,104
Amount Paid In for Stock in Excess of Par Value	20,442,641	13,995,140
Accumulated Earnings Retained and Employed in Business	14,429,542	13,647,072
Retained Earnings Appropriated for Insurance Fund	483,502	516,093
<b>Total Capital</b>	<b>47,783 677</b>	<b>38 902,409</b>
<b>TOTAL LIABILITIES</b>	<b>62,201,922</b>	<b>57,848,072</b>

*The Pennsylvania Salt**Statement of Consolidated Earnings*

For the Years 1952 and 1951

	1952	1951
<b>Net Sales</b>	<u>\$57,484,298</u>	<u>\$47,554,688</u>
<b>Less</b>		
Cost of Goods Sold (excluding repairs, amortization, and depreciation)	33,958,873	23,876,761
Repairs and Maintenance of Buildings and Equipment	4,660,102	3,748,997
Amortization of Emergency Facilities	470,423	271,195
Depreciation of Buildings, Equipment, and Patents	2,922,818	2,152,272
Selling, Administrative, and General Expenses (excluding repairs, amortization, and depreciation)	<u>9,186,525</u>	<u>7,389,092</u>
	<u>51,198,741</u>	<u>37,438,317</u>
<b>Net Operating Earnings</b>	6,285,557	10,116,371
<b>Add—Other Income:</b>		
Interest and Dividend Income,		
Sundry Plant Earnings, and Miscellaneous	<u>648,775</u>	<u>795,911</u>
	6,934,332	10,912,282
<b>Less—Other Deductions:</b>		
Interest Expense Special Inventory Adjustments, Sundry Plant Losses and Miscellaneous	<u>642,238</u>	<u>731,692</u>
<b>Net Earnings before Income Taxes</b>	6,292,094	10,180,590
<b>Less</b>		
Federal and State Income and Excess Profits Taxes (after \$381,721 carry back tax credit for 1952)	<u>3,073,904</u>	<u>6,638,281</u>
<b>Net Earnings before Minority Interest</b>	3,218,190	3,542,309
<b>Less</b>		
Minority Interest in Net Earnings of Consolidated Subsidiary	<u>248</u>	<u>—</u>
<b>Net Earnings for Year</b>	<u><u>3,217,942</u></u>	<u><u>3,542,309</u></u>

**Note:** Since control of Sharples Chemicals Inc. was not acquired until the latter part of December 1951, the earnings of Sharples Chemicals Inc. have been excluded from consolidated earnings for 1951 but are included in consolidated earnings for 1952.

*Manufacturing Company**Statements of Additional Capital and Retained Earnings*

## STATEMENT OF AMOUNT PAID IN FOR STOCK IN EXCESS OF PAR VALUE

For the Years 1952 and 1951	1952	1951
<b>Balance at Beginning of Year</b> . . . . .	\$13,995,140	\$10,051,763
<b>Add</b>		
Amount Paid In representing excess of fair market value over par value of Common Stock issued in exchange for stock of Sharples Chemicals Inc. . . . .	668,290	3,862,989
<b>Amount Paid In from sale of Common Stock above par</b> . . . . .	5,989,515	80,388
	<u>20,652,945</u>	<u>13,995,140</u>
<b>Less</b>		
Commissions and Expenses Paid in connection with sale of Common Stock . . . . .	210,304	—
<b>Balance at End of Year</b> . . . . .	<u>20,442,641</u>	<u>13,995,140</u>

## STATEMENT OF ACCUMULATED EARNINGS RETAINED AND EMPLOYED IN BUSINESS

For the Years 1952 and 1951	1952	1951
<b>Balance at Beginning of Year</b> . . . . .	\$13,647,072	\$14,366,185
<b>Add</b>		
Net Earnings for Year, per Statement of Consolidated Earnings . . . . .	3,217,942	3,542,309
<b>Total</b> . . . . .	<u>16,865,014</u>	<u>17,908,494</u>
<b>Less</b>		
Cash Dividends on Common Stock (\$1.70 per share in 1952; \$2.00 per share in 1951) . . . . .	2,050,612	1,997,960
Expenses of Acquisition of Sharples Chemicals Inc. . . . .	302	40,560
Excess of fair market value of Common Stock issued in exchange for stock of Sharples Chemicals Inc., over proportionate book value of Sharples Chemicals Inc. . . . .	384,558	2,222,902
<b>Total Deductions</b> . . . . .	<u>2,435,472</u>	<u>4,261,422</u>
<b>Balance at End of Year</b> . . . . .	<u>14,429,542</u>	<u>13,647,072</u>

## *The Pennsylvania Salt Manufacturing Company*

### *Disposition of Total Income*

For the Years 1952 and 1951

	1952		1951	
Total income from sales to our customers	\$57,484,298		\$47,554,688	
Other income . . . . .	648,775		795,911	
	<u>58,133,073</u>		<u>48,350,599</u>	
<b>Total Income . . . . .</b>	<b>58,133,073</b>		<b>48,350,599</b>	
<b>The above total was disposed of as follows:</b>				
For compensation to officers . . . . .	279,323	.5%	389,247	.8%
For all other operating compensation and pensions to employees . . . . .	14,531,793	25.0%	10,817,558	22.4%
For taxes to federal, state, and local governments . . . . .	4,165,421	7.2%	7,461,252	15.5%
For the purchase of raw materials and for all other operating costs to outsiders . . . . .	32,545,353	56.0%	23,716,766	49.0%
Amount set aside to replace buildings, equipment, and other capital assets exhausted from use . . . . .	3,393,241	5.8%	2,423,467	5.0%
For dividends paid to the share owners of the company . . . . .	2,050,612	3.5%	1,997,960	4.1%
Earnings retained in the business for expansion and for contingencies . . . . .	<u>1,167,330</u>	<u>2.0%</u>	<u>1,544,349</u>	<u>3.2%</u>
<b>Total Income . . . . .</b>	<b><u>58,133,073</u></b>	<b><u>100.0%</u></b>	<b><u>48,350,599</u></b>	<b><u>100.0%</u></b>

# The Pennsylvania Salt Manufacturing Company

## Source and Disposition of Working Capital

For the Years 1952 and 1951

	1952	1951
<b>Source of New Working Capital:</b>		
Net Earnings for Year . . . . .	\$ 3,217,942	\$ 3,542,309
Net Earnings applicable to minority interest . . . . .	248	—
Amortization and depreciation charged off . . . . .	3,393,241	2,423,467
Net proceeds from sale of new common stock . . . . .	7,332,701	99,528
Net book value of land, buildings, and equipment sold or retired, less reconstruction charges . . . . .	535,351	14,561
Net book value of investments and other assets consolidated or retired . . . . .	104,000	2,800
Addition to deferred liability for employees' retirement benefits . . . . .	—	125,000
<b>Total New Working Capital Received . . . . .</b>	<u>14,583,483</u>	<u>6,207,665</u>
<b>Disposition of Working Capital:</b>		
Dividends paid . . . . .	2,050,612	1,997,960
Total additions to land, buildings, and equipment . . . . .	9,377,791	6,424,163
Investment in foreign affiliates not consolidated . . . . .	—	89,597
Additions to miscellaneous investments . . . . .	10,052	—
Additions to patents . . . . .	8,760	—
Additions to deferred charges . . . . .	321,645	18,872
Provision for reduction of long-term debt . . . . .	317,000	200,000
Expenses of acquisition of Sharples Chemicals Inc . . . . .	302	40,560
Special charge to retained earnings appropriated for insurance fund . . . . .	32,591	—
<b>Total Working Capital Expended . . . . .</b>	<u>12,118,753</u>	<u>8,771,152</u>
<b>Net Increase or (Decrease) in Working Capital . . . . .</b>	<u>2,464,730</u>	<u>(2,563,487)</u>
<b>Accounted for as follows:</b>		
<b>Working Capital at End of Year:</b>		
Current Assets . . . . .	25,845,146	24,410,684
Less—Current Liabilities . . . . .	<u>8,049,380</u>	<u>10,564,135</u>
<b>Net Working Capital . . . . .</b>	<u>17,795,766</u>	<u>13,846,549</u>
<b>Working Capital at Beginning of Year:</b>		
Current Assets . . . . .	27,176,952	22,832,775
Less—Current Liabilities . . . . .	<u>11,845,916</u>	<u>6,422,739</u>
<b>Net Working Capital . . . . .</b>	<u>15,331,036</u>	<u>16,410,036</u>
<b>Net Increase or (Decrease) in Working Capital . . . . .</b>	<u>2,464,730</u>	<u>(2,563,487)</u>
<b>Note</b> Working Capital for 1951 excludes Sharples Chemicals Inc		

*The Pennsylvania Salt**15 Year*

Year	Fixed Assets <sup>1</sup>		Total Assets	Long-Term Debt	Reserves	Share Owners' Investment	Shares of Stock Outstanding <sup>2</sup>		
	Net Working Capital	Gross					Net	Common	Preferred
— In Thousands of Dollars —							In Thousands of Shares		
1938	\$ 6,697	\$19,611	\$ 8,199	\$16,282	\$ —	\$ —	\$16,655	750	—
1939	7,512	20,688	8,299	17,703	—	—	18,102	750	—
1940	8,213	19,688	7,775	20,548	—	150	17,646	750	—
1941	5,958	22,869	10,521	23,025	—	400	18,134	750	—
1942	5,380	23,073	11,168	24,118	—	800	18,411	750	—
1943	6,049	24,728	10,941	24,933	—	1,000	18,944	750	—
1944	7,055	25,523	10,502	24,299	—	940	19,382	750	—
1945	9,729	26,403	8,387	23,368	—	590	19,696	750	—
1946	9,604	27,363	9,847	25,052	—	590	20,573	750	—
1947	11,485	33,031	14,766	31,962	—	792	26,267	757	47
1948	9,481	38,806	20,211	35,432	3,000	709	27,125	764	44
1949	11,206	42,011	21,992	38,858	5,500	625	28,139	767	43
1950	16,410	44,637	23,706	47,728	5,000	1,400	34,905	997	—
1951	15,331	55,168	29,175	57,848	5,158	1,525	38,902	1,074	—
1952	17,796	62,840	34,628	62,202	4,841	1,525	47,784	1,243	—

<sup>1</sup> Includes land, buildings, machinery and equipment<sup>2</sup> Adjusted for 5 to 1 split in 1945

**Manufacturing Company****Review**

Net Sales	Income Before Taxes	Net Income	Per Cent Earned on		Per Share of Common Stock <sup>1</sup>			
			Sales	Share Owners' Investment	Earnings <sup>1</sup>	Dividends	Federal State and Local Taxes <sup>1</sup>	Average Market Price <sup>2</sup>
In Thousands of Dollars								
\$ 9,072	\$ 1,245	\$ 943	10.39	5.06	\$1.26	\$ .90	\$ .80	27¼
10,937	2,064	1,578	14.43	8.72	2.10	1.50	1.07	21½
14,106	3,177	1,701	12.06	9.64	1.27	1.10	2.16	35
17,764	3,986	1,688	9.50	9.31	2.25	1.60	3.11	34¾
21,991	4,539	1,289	5.86	7.00	1.72	1.35	4.23	30
27,716	4,143	1,379	4.97	7.28	1.84	1.30	3.86	32½
25,934	3,567	1,414	5.45	7.29	1.87	1.30	3.61	35¼
24,413	2,140	1,288	5.28	6.54	1.72	1.30	1.71	38½
25,908	3,753	2,077	8.02	10.10	2.77	1.60	2.04	44½
29,972	4,102	2,556	8.53	9.73	3.28	1.80	2.79	44½
32,431	3,580	2,284	7.04	8.42	2.78	1.50	2.51	41¾
33,173	4,420	2,687	8.10	9.55	3.30	1.80	3.15	38¾
39,981	7,956	4,006	10.02	11.48	3.97	2.25	4.71	52¼
47,555	10,181	3,542	7.45	9.11	3.30	2.00	6.94	61¾
57,484	6,292	3,218	5.60	6.73	2.59	1.70	3.35	56¾

<sup>3</sup> Per Share of Common Stock outstanding on December 31 (after provision for Preferred Stock dividends)<sup>4</sup> Average of yearly high and low

## ARMOUR AND COMPANY

The following features are of particular interest in viewing the financial statements and accompanying notes taken from the 1952 annual report of Armour and Company.

Three financial statements for the year are presented headed "Consolidated Earnings Statement," "Consolidated Statement of Capital and Paid-in Surplus and Earnings Employed in the Business," and "Consolidated Statement of Financial Position." Earnings and position data are developed in comparative form.

**Consolidated Statement of Financial Position.** The Statement of Financial Position develops a working capital balance and states the ratio of current assets to current liabilities. Noncurrent assets are then added to working capital in arriving at a "Current assets — less current liabilities" total on the left-hand side of the statement. This total is balanced by long-term liabilities and capital items reported on the right hand side of the statement. Observe on this statement the full description of the inventory valuation procedure, complete data for long-term debt outstanding, and significant details with respect to capital stock issues outstanding. Reporting for the cumulative preferred issue is accompanied by a parenthetical remark summarizing data concerning dividends in arrears. Note the detailed information in the capital section concerning earnings appropriations; appropriations have been included for inventory price decline, for contingencies, and for preferred stock retirements.

**Consolidated Earnings Statement.** The Earnings Statement is prepared in single-step form, a summary of all revenue items being followed by all costs. Comparative detail for the full fiscal period as well as detail for the final portion of the fiscal period is offered.

**Consolidated Statement of Capital and Paid-In Surplus and Earnings Employed in the Business:** The Statement of Capital and Paid-in Surplus and Earnings Employed in the Business offers a reconciliation of surplus data presented on the comparative balance sheet.

**Notes to Financial Statements.** Observe the reference to contingent liabilities under "Guarantees" in the Notes to Financial Statements. Notes also provide full data concerning bond indenture requirements as to payment, sinking fund requirements, etc. Information is also provided here relating to the restrictions upon the availability of earnings for dividends that are found under the provisions of the articles of incorporation and the indentures relating to long-term debt.

## ARMOUR and COMPANY and DOMESTIC SUBSIDIARIES

### CONSOLIDATED EARNINGS STATEMENT

	(a) 14 Weeks Ended Nov. 1, 1952	(a) 13 Weeks Ended Oct. 27, 1951	53 Weeks Ended Nov. 1, 1952	52 Weeks Ended Oct. 27, 1951
<i>Sales, including service revenues</i> - - - - -	\$ 617,382,067	\$ 562,091,551	\$2,184,033,435	\$2,215,201,235
<i>Dividends received from</i>				
Foreign subsidiaries - - - - -	70,000	300,000	138,821	705,348
Other investments - - - - -	33,379	42,227	56,604	82,742
<i>Interest on securities and receivables</i> - - - - -	56,900	45,000	231,803	201,908
<i>Miscellaneous income</i> - - - - -	582,390	346,041	996,044	1,065,591
<i>Total income</i> - - - - -	\$ 618,124,736	\$ 562,824,819	\$2,185,456,707	\$2,217,256,824
<i>Costs:</i>				
Cost of products, supplies and service (exclusive of items below) - - - - -	\$ 571,214,748	\$ 524,094,351	\$2,030,774,607	\$2,054,091,799
Selling, advertising, general and administrative expenses - - - - -	28,104,709	23,471,689	103,725,226	95,209,665
Provision for depreciation - - - - -	3,228,887	3,084,652	12,207,383	10,978,952
Taxes (other than income taxes) - - - - -	2,993,794	2,539,800	12,013,312	12,024,767
Contributions to employees' pension funds - - - - -	611,180	1,662,056	4,223,885	4,900,350
Interest expense				
Current debt - - - - -	745,386	553,401	3,388,308	2,208,865
Long term debt - - - - -	1,180,100	1,112,140	4,458,115	4,443,254
Net amortization of debt (premium) discount and expense - - - - -	(12,014)	(51,927)	19,458	(29,716)
Miscellaneous deductions - - - - -	415,071	124,762	925,550	1,093,072
Provision for Federal income taxes - - - - -	4,536,089	3,275,197	6,341,089	15,695,197
Provision for other income taxes - - - - -	42,282	130,619	239,289	611,615
<i>Total costs</i> - - - - -	\$ 613,060,232	\$ 559,996,742	\$2,178,316,222	\$2,201,227,820
<i>Earnings</i> - - - - -	\$ 5,064,504	\$ 2,828,077	\$ 7,140,485	\$ 16,029,004

(a) The interim statements of earnings within the fiscal year are not separately examined by the independent public accountants

### CONSOLIDATED STATEMENT OF CAPITAL AND PAID-IN SURPLUS AND EARNINGS EMPLOYED IN THE BUSINESS

For The 53 Weeks Ended November 1, 1952

	Capital and Paid in Surplus		Earnings Employed in the Business		
	Parent and Domestic Subsidiaries	(b) Foreign Subsidiaries	Appropriated	Unappropriated	Total
Balance, October 27, 1951	\$ 33,485,053	\$ 5,773,404	\$ 34,021,983	\$ 82,013,716	\$116,035,699
Earnings	-	1,081,930	—	7,140,485	7,140,485
Dividends paid on \$6 Prior Preferred Stock, \$3 00 per share	-	—	—	(1,500,000)	(1,500,000)
Dividends paid to parent company	-	(138,821)	—	—	—
Balance, November 1, 1952	\$ 33,485,053	\$ 6,716,513	\$ 34,021,983	\$ 87,654,201	\$121,676,184

(b) Arising from adjustment of parent company's investments for undistributed earnings of such subsidiaries

**ARMOUR and COMPANY and DOMESTIC SUBSIDIARIES****CONSOLIDATED STATEMENT OF****ASSETS—LESS CURRENT LIABILITIES**

	Nov. 1, 1952	Oct. 27, 1951
<i>Current Assets:</i>		
Cash - - - - -	\$ 25,340,095	\$ 31,035,537
Accounts and notes receivable (less reserves \$2,463,070—1952, \$2,439,317—1951) - -	83,883,521	82,613,876
Inventories—certain products valued at cost on basis of "last-in, first-out," balance of products and supplies at the lower of cost or market except as to products where cost was not ascertainable, which products were valued at market less allowance for selling expense		
Products - - - - -	164,910,894	170,652,902
Supplies - - - - -	17,824,785	23,906,622
	<u>\$291,959,295</u>	<u>\$308,208,937</u>
<i>Current Liabilities</i>		
Notes payable - - - - -	70,404,454	71,243,721
Accounts payable, including payrolls, interest, etc - - - - -	34,159,535	33,514,046
Reserve for Federal income taxes		
For current year - - - - -	6,341,089	12,702,097
For possible additional taxes of prior years - - - - -	4,790,517	10,217,603
Reserves for general and social security taxes - - - - -	4,956,459	6,126,980
Long term debt and subordinated long term debt payable within one year (less \$4,128,000 deposited with Trustee thereagainst—1951) - - - - -	6,228,400	6,553,400
	<u>\$126,880,454</u>	<u>\$140,357,847</u>
<i>Working Capital</i> (Current Assets less Current Liabilities) - - - - -	165,078,841	167,851,090
Ratio of Current Assets to Current Liabilities - - - - -	(2 30)	(2 20)
<i>Investments and Long Term Receivables</i>		
Foreign Subsidiaries		
Capital stock (at equity in net worth less reserve) - - - - -	11,607,154	10,664,025
Receivables - - - - -	14,968,843	13,898,963
	<u>\$ 26,575,997</u>	<u>\$ 24,562,988</u>
Funds deposited with trustees - - - - -	3,997,153	110,489
Others—at cost or less - - - - -	1,890,572	1,689,050
	<u>\$ 32,463,722</u>	<u>\$ 26,362,527</u>
<i>Construction Fund</i> - - - - -	1,939,970	4,510,020
<i>Fixed Assets</i>		
Land - - - - -	22,190,789	22,601,070
Buildings, machinery and fixed equipment - - - - -	209,331,759	198,064,496
Reserve for depreciation - - - - -	(95,240,855)	(90,084,952)
Refrigerator cars, delivery equipment, tools, etc at cost less reserve for depreciation—	29,656,037	30,782,088
	<u>\$165,937,730</u>	<u>\$161,362,702</u>
<i>Patents and Processes</i> - - - - -	1,229,103	—
<i>Deferred Charges</i> - - - - -	2,723,152	2,635,276
<i>Total Assets—Less Current Liabilities</i> - - - - -	<u>\$369,372,518</u>	<u>\$362,721,615</u>

**FINANCIAL POSITION AT NOVEMBER 1, 1952 AND OCTOBER 27, 1951****INVESTORS' EQUITIES**

	Nov. 1, 1952	Oct. 27, 1951
<i>Long Term Debt:</i>		
2% Serial Promissory Notes, due \$1 000,000 semi-annually to July 1, 1956 - - - - -	\$ 6,000,000	\$ 8,000,000
First Mortgage Twenty-Five Year 2½% Sinking Fund Bonds, Series F, due July 1, 1971 - - - - -	50,000,000	50,000,000
First Mortgage 3% Sinking Fund Bonds, Series G, due July 1, 1971 - - - - -	11,646,000	5,586,000
3½% Sinking Fund Debentures, due September 1, 1968 - - - - -	36,400,000	37,600,000
Agreements for the purchase of refrigerator cars, payments due quarterly to October, 1958 - - - - -	6,845,208	8,250,896
<i>Subordinated Long Term Debt:</i>		
3½% Cumulative Income Debentures (Subordinated), due November 1, 1972 - - - - -	26,275,000	27,662,000
	<u>\$137,166,208</u>	<u>\$137,098,896</u>
<i>Preferred Stock—\$6 Cumulative Convertible Prior Preferred Stock—no par value (stated value \$100 per share) authorized 500,000 shares, issued 500,000 shares - - - - -</i> (Dividends in arrears at October 1, 1952—\$12.00 per share aggregating \$6,000,000)	50,000,000	50,000,000
<i>Common Stock—par value \$5 per share—authorized 15,000,000 shares, issued 4,065,712 shares at November 1, 1952 - - - - -</i>	20,328,560	20,328,563
<i>Capital and Paid-in Surplus:</i>		
Parent company and domestic subsidiaries - - - - -	33,485,053	33,485,053
Foreign subsidiaries (undistributed earnings) - - - - -	6,716,513	5,773,404
<i>Earnings Employed in the Business:</i>		
Appropriated for:		
Inventory price decline - - - - -	17,500,000	17,500,000
Contingencies - - - - -	993,100	993,100
Payment of interest and sinking fund on subordinated debentures - - - - -	7,875,000	7,875,000
Cost of retirement of \$3,299,600 stated value of \$6 Cumulative Convertible Prior Preferred Stock and \$3,371,500 par value of 7% Cumulative Preferred Stock - - - - -	7,653,883	7,653,883
Unappropriated - - - - -	87,654,201	82,013,716
	<u>\$121,676,184</u>	<u>\$116,035,699</u>
<i>Total Investors' Equities - - - - -</i>	<u><u>\$369,372,518</u></u>	<u><u>\$362,721,615</u></u>

**ARMOUR and COMPANY and DOMESTIC SUBSIDIARIES****NOTES TO FINANCIAL STATEMENTS***Federal Income Taxes.*

The provision for Federal income taxes shown on the Consolidated Earnings Statement includes \$64,300 in the 1952 fiscal year and \$150,400 in the 1951 fiscal year in respect of excess profits tax liabilities of certain consolidated subsidiaries

*Guarantees*

Notes payable of foreign subsidiaries were guaranteed by Armour and Company in the amounts of \$10,476,827 at November 1, 1952 and \$9,565,699 at October 27, 1951

*Long Term Debt*

Long term debt maturities and sinking fund requirements for the fiscal year 1953 aggregating \$4,841,400 have been deducted from long term debt and included in current liabilities at November 1, 1952. A like amount is payable in the years 1954 and 1955. The amount payable in 1956 will be \$5,641,400 and in 1957 \$6,141,400.

A sale of \$12,000,000 principal amount of First Mortgage 3% Sinking Fund Bonds Series G, due July 1, 1971 was negotiated in March, 1951 at 98½% of principal amount. \$5,700,000 of these bonds were issued in April, 1951 and the balance of \$6,300,000 were issued on March 5, 1952.

*Subordinated Long Term Debt*

The indenture under which the Income Debentures were issued provides that the company pay into the sinking fund in each year after 1947 an amount sufficient to bring total sinking fund payments up to an average of at least \$1,400,000 per annum during such period. The amount of the required payment in any one year may be greater or less than \$1,400,000 under a formula based mainly on the company's earnings. The amount required to be paid into the sinking fund on September 15, 1953 is \$1,408,384, which will be used to redeem \$1,387,000 principal amount of debentures. The latter amount has been deducted from subordinated long term debt and included in current liabilities at November 1, 1952.

*Authorized and Unissued Preference Stocks*

At a special meeting held July 17, 1946, the shareholders adopted an amendment to the Articles of Incorporation which provided for the authorization of 500,000 shares, without par value, of a class of stock designated 'First Preference Stock' and 350,000 shares, without par value, of a class of stock designated 'Second Preference Stock'. These shares were unissued at November 1, 1952.

*Earnings Unrestricted for Dividends*

Under the collective provisions of the Articles of Incorporation and the Indentures relating to Long Term Debt, \$30,813,095 of the Earnings Employed in the Business was unrestricted for the payment of dividends on preferred stock at November 1, 1952. Because of the unpaid accrued dividends on preferred stock, none of the Earnings Employed in the Business was available for the payment of common dividends at November 1, 1952. Had these accrued dividends on preferred stock been paid, then under the collective provisions of the Articles of Incorporation and the Indentures relating to Long Term Debt, \$9,501,619 of the Earnings Employed in the Business would have been unrestricted for the payment of dividends on common stock at November 1, 1952.

**ACCOUNTANTS' REPORT***To the Board of Directors of Armour and Company*

In our opinion, the accompanying consolidated statement of financial position and the related consolidated statements of earnings and of capital and paid in surplus and earnings employed in the business present fairly the position of Armour and Company and its domestic subsidiaries at November 1, 1952, and the results of their operations for the fiscal year then ended in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year. This opinion is based on an examination of the statements which was made in accordance with generally accepted auditing standards, and included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

Chicago, January 5, 1953

PRICE WATERHOUSE & CO

## AMERICAN TELEPHONE AND TELEGRAPH COMPANY

The following features are of particular interest in viewing the financial statements and accompanying notes taken from the 1952 annual report of American Telephone and Telegraph Company.

Three financial statements for the year are presented under the conventional headings, Balance Sheet, Income Statement, and Statement of Retained Earnings. The balance sheet and the income statement are presented in comparative form.

**Balance Sheet.** Plant and other long-term assets are listed first in presenting assets, and the capital and funded debt are listed first in presenting equities. Emphasis is thus placed upon long-term assets and the methods of their financing rather than upon the working capital data, an order of presentation which is typical for balance sheets of public utility enterprises. It will be observed that current assets and current liabilities form only a small fraction of the respective asset and equity totals.

**Income Statement.** The income statement is prepared in multiple-step with a series of revenue and income designations as: (1) total operating revenues, (2) net operating revenues, (3) net operating income, (4) income available for fixed charges, and (5) net income. The earnings per share are presented following the net income determination. Such calculation is based upon the *average* shares outstanding as indicated by the notes accompanying the statement.

**Statement of Retained Earnings.** Special charges and credits arising during the year are recognized as adjustments to retained earnings and are presented on this statement. These include certain organization costs that are written off, as well as other miscellaneous and presumably non-recurring charges and credits. The change in retained earnings is reconciled here.

**Notes to Balance Sheet and Income Statement.** Observe the full description of debenture conversion privileges and the reservations of authorized and unissued shares to meet such future conversions in note (b). A summary of employee stock purchase plans in explanation of the "Common Stock Installments" balance presented in the Capital Stock Equity section on the balance sheet is found in note (c). Notes are followed by a statement of the company's pension plan and its administration. The "Certificate of Audit" has not been reproduced here (Lybrand, Ross Bros. and Montgomery, Auditors).

**Additional Summaries and Statements.** It should be observed that nearly six billion dollars in the asset total represents investments in subsidiary companies. In order to present the full economic implications of such investments and subsidiary control, the company prepares consolidated statements summarizing position and operation as though the related units were one entity. The consolidated statements referred to as the "Bell System Financial Statements" are included in the annual report for the American Telephone and Telegraph Company but have not been reproduced here.

## AMERICAN TELEPHONE AND TELEGRAPH COMPANY

## BALANCE SHEET

## ASSETS

PLANT AND OTHER INVESTMENTS	December 31, 1952	December 31, 1951
Telephone Plant (a)		
Telephone Plant in Service .....	\$1,013,835,400	\$ 940,444,830
Telephone Plant under Construction .....	42,334,162	24,035,517
Property Held for Future Telephone Use .....	360,476	473,968
	<u>\$1,056,530,038</u>	<u>\$ 964,954,315</u>
Less: Depreciation Reserve .....	404,887,703	373,151,085
<i>Provision to meet loss of investment in Telephone Plant upon its ultimate retirement from service.</i>		
	<u>\$ 651,642,335</u>	<u>\$ 591,803,230</u>
Investments in Subsidiaries—at cost (see page 38) .....	5,916,466,498	5,302,746,670
Stocks .....	\$5,720,206,498	
Advances .....	196,260,000	
Other Investments—at cost (see page 38) .....	61,018,935	74,868,116
Stocks . . . . .	\$ 60,545,858	
Miscellaneous .....	473,077	
<b>Total</b> .....	<u>\$6,629,127,768</u>	<u>\$5,969,418,016</u>
<b>CURRENT ASSETS</b>		
Cash and Demand Deposits .....	\$ 16,032,176	\$ 15,291,209
Temporary Cash Investments .....	687,850,286	543,799,223
<i>Comprises at December 31, 1952 U. S. short-term obligations having a market value of \$687,852,000.</i>		
Special Cash Deposits .....	1,505,350	2,578,289
Current Receivables .....	44,464,681	40,761,189
<i>Amounts due for service (less reserve amounting to \$200,000 at December 31, 1952), working advances, interest and dividends receivable, etc.</i>		
Material and Supplies .....	11,004,218	10,797,180
<i>Principally for construction and maintenance purposes.</i>		
<b>Total Current Assets</b> .....	<u>\$ 760,856,711</u>	<u>\$ 613,227,090</u>
<b>DEFERRED CHARGES</b>		
	\$ 2,471,952	\$ 3,808,749
<b>Total Assets</b> .....	<u>\$7,392,456,431</u>	<u>\$6,586,453,855</u>

For notes, see page 923.

## AMERICAN TELEPHONE AND TELEGRAPH COMPANY

## BALANCE SHEET—Continued

## LIABILITIES

	December 31, 1952	December 31, 1951
<b>CAPITAL STOCK EQUITY</b>		
Common Stock—Par Value (\$100 per share) .....	\$3,897,944,800	\$3,317,945,000
<i>At December 31, 1952—authorized, 60,000,000 shares; outstanding, 38,979,448 shares (b).</i>		
Common Stock Installments (c) .....	35,797,631	66,714,082
Premiums on Common Stock ... .. <i>Amount received in excess of par value.</i>	1,015,026,847	797,713,867
Retained Earnings (see page 36) .....	349,250,056	312,569,989
<b>Total Capital Stock Equity</b> .....	<u>\$5,298,019,334</u>	<u>\$4,494,942,938</u>
 <b>FUNDED DEBT</b>		
Convertible Debentures .....	\$ 471,861,500	\$ 489,317,300
Other Debentures (d) .....	1,440,000,000	1,440,000,000
<b>Total Funded Debt</b> .....	<u>\$1,911,861,500</u>	<u>\$1,929,317,300</u>
 <b>CURRENT AND ACCRUED LIABILITIES</b>		
Dividend Payable .....	\$ 87,407,878	\$ 74,452,212
Accounts Payable .....	28,202,513	23,248,354
Interest Accrued .....	14,637,035	12,482,507
Taxes Accrued .....	37,580,727	36,480,199
<b>Total Current and Accrued Liabilities</b> .....	<u>\$ 167,828,153</u>	<u>\$ 146,663,272</u>
 <b>DEFERRED CREDITS</b>		
Unextinguished Premium on Funded Debt .....	\$ 2,532,574	\$ 2,918,241
<i>(After deduction of unamortized discount and expense.)</i>		
Other Deferred Credits .....	12,214,870	12,612,104
<b>Total Deferred Credits</b> .....	<u>\$ 14,747,444</u>	<u>\$ 15,530,345</u>
<b>Total Liabilities</b> .....	<u>\$7,392,456,431</u>	<u>\$6,586,453,855</u>

# AMERICAN TELEPHONE AND TELEGRAPH COMPANY

## INCOME STATEMENT

	Year 1952	Year 1951
<b>OPERATING REVENUES</b>		
Toll Service Revenues (e) .....	\$230,296,579	\$219,521,792
License Contract Revenues .....	38,182,536	34,336,204
<i>Received for services furnished telephone companies.</i>		
Miscellaneous Revenues .....	15,986,778	14,842,217
Less: Uncollectible Operating Revenues .....	958,118	965,640
<b>Total Operating Revenues</b> .....	<u>\$283,507,775</u>	<u>\$267,734,573</u>
<b>OPERATING EXPENSES (f)</b>		
Current Maintenance .....	\$ 58,045,750	\$ 52,560,620
Depreciation Expense .....	38,293,423	35,207,244
Traffic Expenses .....	37,468,072	33,574,312
Commercial Expenses .....	9,721,314	9,041,693
Operating Rents .....	4,757,834	4,433,784
General Administration .....	16,394,668	13,296,431
Accounting and Treasury Expenses .....	11,918,533	10,161,121
Development and Research (g) .....	18,035,459	15,087,146
Provision for Employees' Service Pensions (h) .....	8,085,183	7,207,235
Employees' Sickness, Accident, Death and Other Benefits .....	2,515,094	2,467,697
Other General Expenses .....	6,814,735	5,367,098
Less: Expenses Charged Construction .....	1,284,191	1,178,937
<b>Total Operating Expenses</b> .....	<u>\$210,765,874</u>	<u>\$187,225,444</u>
<b>Net Operating Revenues</b> .....	<u>\$ 72,741,901</u>	<u>\$ 80,509,129</u>
<b>OPERATING TAXES</b>		
Federal Taxes on Income .....	\$ 29,508,000	\$ 28,679,000
Other Taxes—principally State, local and Social Security ..	16,315,074	15,596,211
<b>Total Operating Taxes</b> .....	<u>\$ 45,823,074</u>	<u>\$ 44,275,211</u>
<b>Net Operating Income</b> .....	<u>\$ 26,918,827</u>	<u>\$ 36,233,918</u>
<b>OTHER INCOME</b>		
Dividend Income (i) ..	\$368,198,853	\$333,834,158
Interest Income .....	20,343,604	16,593,950
Miscellaneous Income .....	1,747,246	1,311,205
Less: Miscellaneous Deductions from Income (h) .....	1,442,479	1,128,863
<b>Income Available for Fixed Charges</b> .....	<u>\$415,766,051</u>	<u>\$386,844,368</u>
<b>FIXED CHARGES</b>		
Interest on Funded Debt .....	\$ 56,131,172	\$ 57,968,655
Other Interest .....	1,206,295	2,010,567
Less: Release of Premium on Funded Debt—net .....	64,620	79,562
<b>Net Income</b> .....	<u>\$358,493,204</u>	<u>\$326,944,708</u>
Earnings per share (j) .....	<u>\$10.09</u>	<u>\$10.54</u>

## Statement of Retained Earnings—Year 1952

BALANCE—DECEMBER 31, 1951 ..	\$312,569,989
Net Income .....	\$358,493,204
Miscellaneous additions .....	975,248
<b>TOTAL ADDITIONS</b> .....	<u>\$359,468,452</u>
Dividends declared .....	\$319,754,772
Organization and Capital Stock Expense charged off .....	1,524,946
Charge in connection with acquisition of telephone business and certain prop- erties from Western Union Telegraph Company .....	1,065,000
Miscellaneous deductions .....	443,667
<b>TOTAL DEDUCTIONS</b> .....	<u>\$322,788,385</u>
BALANCE—DECEMBER 31, 1952 ..	<u>\$349,250,056</u>

# AMERICAN TELEPHONE AND TELEGRAPH COMPANY

## NOTES TO BALANCE SHEET AND INCOME STATEMENT

(a) Telephone Plant comprises land and buildings, rights of way, poles, wire, cable, underground conduit, switchboards, vehicles, furniture, etc. As required by the Uniform System of Accounts for Telephone Companies, Telephone Plant in Service, Telephone Plant under Construction, and Property Held for Future Telephone Use are stated at cost to the Company except that property included therein which was acquired from a predecessor owner is stated at its original cost when first dedicated to the public use. Expenditures for patents have been charged off as incurred and thus are not included in the asset accounts.

(b) A total of 4,715,615 authorized and unissued shares was reserved at December 31, 1952 for conversion of Debentures as follows: 1,636,546 shares for the Fifteen Year 2<sup>3</sup>/<sub>4</sub>% Convertible Debentures due December 15, 1961 which are convertible at \$143.54 per share; 54,057 shares for the Twelve Year 3<sup>1</sup>/<sub>8</sub>% Convertible Debentures due March 1, 1963 which are convertible at \$135 per share; and 2,477,952 shares for the Twelve Year 3<sup>1</sup>/<sub>8</sub>% Convertible Debentures due July 31, 1964 which are convertible at \$136 per share. (The conversion prices are subject to adjustment as provided in the respective indentures.) See also note (c) below.

(c) Installment payments and interest applicable to shares under elections to purchase by employees of the Company and its subsidiaries under Employees Stock Plans. The Plans provide that an employee may exercise his election to purchase in whole or in part at any time and receive a refund which may be taken in cash or applied to the purchase of shares. At December 31, 1952 installment payments were being made on 1,754,453 shares of the 3,000,000 shares authorized by the stockholders in 1950.

(d) Of these debentures \$140,000,000 mature in 1970, \$775,000,000 from 1971 to 1980, and \$525,000,000 thereafter.

(e) Represents the Company's share of total revenues from toll business handled jointly with subsidiaries and other telephone companies of \$256,157,000 in 1952 and \$257,245,000 in 1951.

(f) Operating expenses are incurred principally in providing the Company's long distance communication services and in performing License Contract services furnished telephone companies.

(g) Cost of work carried on in behalf of the Company by Bell Telephone Laboratories.

(h) The total provision for employees' service pensions amounted to \$5,542,971 for 1952 and \$5,605,073 for 1951, of which \$457,755 for each year was charged to Miscellaneous Deductions from Income in order to comply with accounting requirements of the Federal Communications Commission. The Company and its independent public accountants consider that this latter amount was in fact a current operating expense.

(i) Includes dividends from subsidiary of \$363,543.76 in 1952 and \$329,347.16 in 1951.

(j) Based on average shares outstanding—3,555,535 in 1952 and 3,102,845 in 1951.

Amounts accrued for employees' service pensions are paid to Bankers Trust Company as Trustee of the Pension Fund established by the Company which is irrevocably devoted to service pension purposes. Such Pension Fund, which is not a part of the assets of the Company, amounted to \$87,291,362 on December 31, 1952 and is more than adequate to meet future pension payments for those now receiving pensions and those now entitled to retire on pension at their own request.

**LOCKHEED AIRCRAFT CORPORATION**

The following features are of interest in viewing the financial statements and accompanying notes taken from the 1952 annual report of Lockheed Aircraft Corporation.

Three financial statements for the year are presented under the headings Consolidated Balance Sheet, Consolidated Earnings and Earnings Retained for Use in the Business, and Consolidated Additional Capital. Statements are presented in comparative form. Financial statements are supplemented by a summary of financial "Highlights" which is reproduced here.

**Consolidated Balance Sheet.** The balance sheet is prepared in the conventional account form. Prepaid expenses are listed in the current assets grouping. An investment in a subsidiary company is reported at cost with full information concerning the change in the company's equity in the subsidiary summarized in the notes in support of the statement. Reference is made to the number of authorized shares reserved in connection with stock option plans in summarizing the stockholders' equity.

**Consolidated Earnings and Earnings Retained for Use in the Business.** The earnings summary is prepared in combined income and earned surplus form. Earnings for the year after income taxes are added to the retained earnings balance at the beginning of the year; from this total cash and stock dividend subtractions are made in arriving at the retained earnings balance at the end of the year. Comparative retained earnings balances on the balance sheet are thus reconciled.

**Consolidated Additional Capital.** Paid-in capital changes other than changes in the capital stock balances are summarized in the additional capital summary. Note increases in "additional capital" for the issue of stock for considerations (cash and services) in excess of stock par and for a transfer from retained earnings to reflect a stock dividend; note decrease arising in connection with stock split. The statement of additional capital reconciles comparative additional capital balances reported on the balance sheet.

**Notes to Financial Statements.** Notes include special analyses and data with respect to such items as inventory pricing and valuation, property accounts and depreciation, provisions for liability under government renegotiation procedures, stock dividends and stock option plans, and rent commitments outstanding. The "Auditors' Certification" is not reproduced (Arthur Young & Company, Auditors).

**Highlights.** A summary of financial Highlights is presented in comparative form for a five-year period, 1948-1952. Among the other data provided are included sales analyses, earnings analyses, dividends analyses, employee earnings analyses, working capital analyses and ratios, and share book values.

## HIGHLIGHTS

YEAR ENDED DECEMBER 31

	1952	1951	1950	1949	1948
Sales	\$ 438,122,000	\$237,230,000	\$173,331,000	\$117,667,000	\$125,621,000
Military portion of sales	90%	84%	69%	83%	75%
Spare parts sales (included)	\$ 72,024,000	\$ 43,787,000	\$ 28,842,000	\$ 23,062,000	\$ 21,668,000
Earnings after federal taxes	\$ 9,058,000	\$ 5,793,000	\$ 7,210,000	\$ 5,491,000	\$ 6,239,000
Per cent of earnings to sales	2.1%	2.4%	4.2%	4.7%	5%
Earnings per share of stock	\$ 3.61	\$ 2.55	\$ 3.23	\$ 2.55	\$ 2.90
Increase in stockholders' equity	\$ 6,471,000	\$ 4,087,000	\$ 4,823,000	\$ 3,352,000	\$ 4,626,000
Provision for federal income and excess profits taxes	\$ 8,400,000	\$ 4,049,000	\$ 7,857,000	\$ 2,225,000	\$ 1,559,000
Property and payroll taxes paid	\$ 6,403,000	\$ 4,460,000	\$ 2,623,000	\$ 1,951,000	\$ 2,782,000
Total taxes per share	\$ 5.89	\$ 3.75	\$ 4.68	\$ 1.94	\$ 2.02
Dividends paid to stockholders— owners—in cash	\$ 2,751,000	\$ 2,489,000	\$ 3,511,000	\$ 2,152,000	\$ 1,614,000
Dividends paid in cash per share	\$ 1.20	\$ 1.10	\$ 1.50	\$ 1.00	\$ .75
Number of stockholders of record	10,779	10,218	8,955	8,837	9,086
Price range per share of Lockheed stock on N. Y. Stock Exchange	18½–24½	16½–21½	11½–19½	8–12½	6¾–12¾
Number of employees	47,750	39,523	20,241	16,676	15,905
Wages and salaries paid to all employees	\$ 181,573,000	\$130,124,000	\$ 65,427,000	\$ 62,712,000	\$ 53,756,000
Average hourly earnings of hourly paid employees at yearend	\$ 1.96	\$ 1.92	\$ 1.78	\$ 1.61	\$ 1.53
Backlog	\$1,608,669,000	\$970,435,000	\$447,418,000	\$229,746,000	\$195,901,000
Military portion of backlog	92%	88%	85%	79%	93%
Commercial backlog (included)	\$ 122,032,000	\$115,721,000	\$ 66,693,000	\$ 48,090,000	\$ 14,529,000
Working capital	\$ 36,178,000	\$ 31,683,000	\$ 28,262,000	\$ 28,741,000	\$ 31,175,000
Working capital per share of stock	\$ 14.40	\$ 13.95	\$ 12.64	\$ 13.37	\$ 14.49
Ratio of current assets to current liabilities	1.2 to 1	1.3 to 1	1.6 to 1	1.7 to 1	2.4 to 1
Book value of stockholders' equity in the company	\$ 61,869,000	\$ 55,398,000	\$ 51,311,000	\$ 46,488,000	\$ 43,135,000
Book value of each share of stock	\$ 24.63	\$ 24.38	\$ 22.94	\$ 21.59	\$ 20.05
Expenditures for plant facilities	\$ 6,230,000	\$ 8,020,000	\$ 3,745,000	\$ 2,479,000	\$ 2,661,000
Inventories of materials, planes and parts in manufacture, and finished parts	\$ 244,340,000	\$141,065,000	\$ 68,896,000	\$ 67,899,000	\$ 46,824,000
Square feet of floor area	11,098,000	10,858,000	6,050,000	5,592,000	5,557,000

NOTE All per share figures adjusted retroactively for two-for-one stock split in June, 1951. Per share figures for 1952 reflect the 10% stock dividend of December, 1952. The market price of our stock on the ex-dividend date was 21½, which means our stock dividend was equivalent to \$2.19 a share.

**LOCKHEED  
AIRCRAFT  
CORPORATION**
**C O N S O L I D A T E D**

	1952	1951
<i>Assets</i>		
<b>CURRENT ASSETS:</b>		
Cash	\$ 49,356,724	\$ 20,207,067
Accounts receivable—United States Government (including costs and fees under cost reimbursement type contracts: 1952 — \$19,044,217; 1951 — \$15,011,698)	52,159,604	38,830,757
Other trade and sundry accounts receivable	3,849,642	6,074,767
Claims for tax refunds, interest on tax refunds and renegotiation rebates	1,210,309	568,365
Inventories less partial payments (total before deducting partial payments: 1952 — \$244,339,727; 1951 — \$141,065,066) (Note 1)	77,743,576	58,291,262
Advances to subcontractors less partial payments received from the United States Government (total before deducting partial payments: 1952 — \$19,166,105; 1951 — \$11,571,614)	3,213,662	1,556,031
Prepaid expenses	3,062,357	2,336,300
Total current assets	<u>\$190,595,874</u>	<u>\$127,864,549</u>
<b>INVESTMENT IN PACIFIC FINANCE CORPORATION — at cost (Note 2)</b>		
	5,469,283	5,469,283
<b>FIXED ASSETS — at cost (less accumulated depreciation and amortization. 1952 — \$25,428,155; 1951 — \$22,812,258) (Note 3)</b>		
	25,901,204	22,689,564
<b>DEFERRED CHARGES (including development expense: 1952 — \$1,097,716; 1951 — \$537,868)</b>		
	<u>1,512,185</u>	<u>816,143</u>
	<u><u>\$223,478,546</u></u>	<u><u>\$156,839,539</u></u>

# BALANCE SHEET at December 31

	1952	1951														
<i>Liabilities and Stockholders' Equity</i>																
<b>CURRENT LIABILITIES:</b>																
Notes payable — banks	\$ 46,000,000	\$ 30,000,000														
Accounts payable — trade	36,525,790	23,320,807														
Salaries and wages	8,115,869	3,708,142														
Federal income and excess profits taxes (Note 5)	10,141,089	5,550,000														
Taxes (other than income)	1,492,705	1,401,597														
Advances and deposits received on fixed-price and incentive contracts	45,352,764	26,771,715														
Other liabilities	<u>6,789,953</u>	<u>5,428,844</u>														
Total current liabilities	<u>\$154,418,170</u>	<u>\$ 96,181,105</u>														
<b>DEFERRED INCOME</b> — received in partial payments on Government fixed-price and incentive contracts (Note 6)																
	<u>\$ 7,191,415</u>	<u>\$ 5,260,437</u>														
<b>STOCKHOLDERS' EQUITY</b> (Note 7)																
Capital stock, \$1 par value																
Authorized 3,000,000 shares (64,152 shares reserved for exercise of employees stock options at December 31, 1952)																
	<table><tr><td></td><td>Number of Shares</td></tr><tr><td></td><td>1952</td><td>1951</td></tr><tr><td>Issued and outstanding</td><td>2,284,463</td><td>2,271,858</td></tr><tr><td>To be issued</td><td><u>227,696</u></td><td><u>—</u></td></tr><tr><td></td><td><u>2,512,159</u></td><td><u>2,271,858</u></td></tr></table>			Number of Shares		1952	1951	Issued and outstanding	2,284,463	2,271,858	To be issued	<u>227,696</u>	<u>—</u>		<u>2,512,159</u>	<u>2,271,858</u>
	Number of Shares															
	1952	1951														
Issued and outstanding	2,284,463	2,271,858														
To be issued	<u>227,696</u>	<u>—</u>														
	<u>2,512,159</u>	<u>2,271,858</u>														
	\$ 2,512,159	\$ 2,271,858														
Additional capital, per accompanying statement	16,156,470	11,154,377														
Earnings retained for use in the business, per accompanying statement (Note 8)	<u>43,200,332</u>	<u>41,971,762</u>														
Total stockholders' equity	<u>\$ 61,868,961</u>	<u>\$ 55,397,997</u>														
	<u>\$223,478,546</u>	<u>\$156,839,539</u>														

**LOCKHEED  
AIRCRAFT  
CORPORATION**
**CONSOLIDATED EARNINGS AND  
EARNINGS RETAINED FOR USE IN THE BUSINESS**

	<b>YEAR ENDED DECEMBER 31</b>	
	<b>1952</b>	<b>1951</b>
<b>SALES AND OTHER INCOME:</b>		
Sales (including costs and fees under cost-plus-a-fixed-fee contracts)	\$438,122,395	\$237,229,666
Dividends (Note 2)	631,874	631,874
Discounts and other income	1,376,243	937,824
Elimination of liability under profit limiting provisions of Government contracts (Note 4)	—	2,600,000
	<u>\$440,130,512</u>	<u>\$241,399,364</u>
<b>DEDUCT:</b>		
Cost of sales	\$384,845,666	\$202,082,089
Administrative and general expenses	35,955,233	28,818,516
Interest paid	1,871,587	656,739
	<u>\$422,672,486</u>	<u>\$231,557,344</u>
<b>EARNINGS BEFORE PROVISION FOR FEDERAL TAXES ON INCOME</b>	<b>\$ 17,458,026</b>	<b>\$ 9,842,020</b>
<b>PROVISION FOR FEDERAL TAXES ON INCOME</b> (including excess profits tax \$450,000 in 1952, none in 1951) (Note 5)	<u>8,400,000</u>	<u>4,048,557</u>
<b>EARNINGS FOR THE YEAR</b> (Notes 4 and 5)	<b>\$ 9,058,026</b>	<b>\$ 5,793,463</b>
<b>EARNINGS RETAINED FOR USE IN THE BUSINESS— AT THE BEGINNING OF THE YEAR</b>	<u>41,971,762</u>	<u>38,666,895</u>
	<u><b>\$ 51,029,788</b></u>	<u><b>\$ 44,460,358</b></u>
<b>LESS DIVIDENDS:</b>		
Cash dividends		
1952—\$1 20 per share plus \$16,298 paid in lieu of fractional shares from stock dividend	\$ 2,751,130	
1951—\$1 10 per share, giving effect to 1951 stock split		\$ 2,488,596
Stock dividend—one share for ten (Note 7)	5,078,326	—
	<u>\$ 7,829,456</u>	<u>\$ 2,488,596</u>
<b>EARNINGS RETAINED FOR USE IN THE BUSINESS— AT THE END OF THE YEAR</b> (Note 8)	<u><b>\$ 43,200,332</b></u>	<u><b>\$ 41,971,762</b></u>
Depreciation and amortization of fixed assets charged to cost of sales and administrative and general expenses (Note 3)	\$ 2,892,436	\$ 1,812,267
<b>CONSOLIDATED ADDITIONAL CAPITAL</b>		
<b>BALANCE AT THE BEGINNING OF THE YEAR</b> (additional paid in capital) _____	<b>\$ 11,154,377</b>	<b>\$ 11,525,591</b>
<b>ADD:</b>		
Excess of amount realized over par value of capital stock issued upon exercise of employees' stock options	151,463	360,310
Compensation recognized in connection with employees' stock options	—	399,000
Transfer from earnings retained for use in the business to reflect the stock dividend (Note 7)	4,850,630	—
	<u>\$ 16,156,470</u>	<u>\$ 12,284,901</u>
<b>DEDUCT:</b>		
Transfer to capital stock account to maintain the \$1 par value on 1,130,524 shares of capital stock issued in connection with the stock split on June 29, 1951	—	1,130,524
<b>BALANCE AT THE END OF THE YEAR</b>	<u><b>\$ 16,156,470</b></u>	<u><b>\$ 11,154,377</b></u>

# NOTES TO FINANCIAL STATEMENTS

## NOTE 1:

Inventories are stated at cost which is at or below market value, and are detailed as follows

	At December 31, 1952	At December 31, 1951
Finished spare parts	\$ 2,228,484	\$ 2,083,227
Work in process	195,558,206	102,869,317
Raw materials, supplies and sundries	46,553,037	36,112,522
	<u>\$244,339,727</u>	<u>\$141,065,066</u>
Less Partial payments received from United States Government	166,596,151	82,773,804
	<u>\$ 77,743,576</u>	<u>\$ 58,291,262</u>

Inventories of materials and spare parts are based on per petual inventory records, which are adjusted to reflect the results of inventory counts taken systematically during each year, and are priced at average cost. Inventories of work in process, in addition to material, labor and overhead, include tooling and engineering costs applicable to models in process of production. It is the policy of the Company that as deliveries under fixed-price and incentive contracts are made, the estimated profit for the contract or program is taken into income in proportion to the sales price of the deliveries.

## NOTE 2:

At December 31, 1952 the Company owned 315,937 shares (33.7%) of the common stock of Pacific Finance Corporation. The Company's equity in the net assets of Pacific Finance Corporation increased by \$187,081 in 1951 and \$580,278 in 1952 to a total equity at December 31, 1952 of \$8,426,831. This equity is \$2,957,548 in excess of the amount at which the investment is carried on the books. The increases include the excess of income over dividends and the effect of various issues of Pacific Finance Corporation stock to other persons. Dividends received from this Company were \$631,874 in 1952 and in 1951.

## NOTE 3:

The fixed assets of the Company have an original cost of \$51,329,359, of which \$22,535,719 has been written off in prior years as a cost of operations and \$2,892,436 was written off in 1952. The original cost of \$51,329,359 consists of

\$17,354,606 of items fully written off, \$24,342,290 of items which are currently being written off pro rata over their estimated useful lives, \$7,778,245 which is being amortized over a sixty month period under the current law governing emergency facilities and \$1,854,218 of land not subject to depreciation.

In the accompanying statements leasehold improvements and amortization thereof are included in fixed assets and depreciation and amortization of fixed assets respectively, whereas, in the 1951 report to stockholders, the unamortized balance was classified as a deferred charge.

## NOTE 4:

A substantial portion of the Company's Government contracts on which deliveries were made during the years 1948 through 1952 is subject to either the Renegotiation Act of 1948 or the Renegotiation Act of 1951, or, prior to December 31, 1950, was subject to the Vinson Trammell Act. An amount of \$2,600,000 had been provided at December 31, 1950 to cover the Company's estimated liability under the latter act.

Renegotiation for the years 1948 and 1949 has been settled without any refund, preliminary renegotiation proceedings for the years 1950 and 1951 have indicated there will be no refunds for those years, and it is believed that profits earned in 1952 on contracts subject to renegotiation will not be considered excessive. As some of the receipts and accruals under contracts which were originally subject to the Vinson Trammell Act are now subject to the Renegotiation Act of 1951, the Vinson Trammell Act is no longer applicable to these contracts. Therefore, as no refunds under any of the profit limiting acts relating to Government contracts are now anticipated, the liability at December 31, 1950 of \$2,600,000 no longer exists, and this amount has been included in income for the year ended December 31, 1951 and in the gross income used in the computation of Federal income taxes.

## NOTE 5:

Federal income tax liabilities of the Company and its subsidiaries have been determined through 1949 and field examinations for the years 1950 and 1951 have been completed.

The provision for the year 1951 reflects the tax effect (approximately \$500,000) of operating loss carry-forwards of two subsidiary companies.

**LOCKHEED  
AIRCRAFT  
CORPORATION**
**NOTE 6:**

The amounts shown in the accompanying balance sheets as deferred income arise from the inclusion of administrative and general expenses in the basis on which partial payments are received from the Government on fixed-price and incentive contracts, whereas such expenses are charged off by the Company as they are incurred. These amounts of deferred income are taken into income in ensuing periods as deliveries are made under the contracts.

**NOTE 7:**

On December 1, 1952, a dividend was declared in capital stock of the Company at the rate of one share for each ten shares held by stockholders of record on December 23, 1952. In January 1953 this dividend was paid by the issuance of 227,696 shares of capital stock and the payment of \$16,298 (classified as cash dividends paid) in lieu of the issuance of fractional shares. The stock dividend and the related adjustment to currently exercisable options were reflected in the accounts in 1952 by reducing earnings retained for use in the business by \$5,078,326 and increasing capital stock and additional capital by \$227,696 and \$1,850,630 respectively.

Employees' stock options outstanding at December 31, 1952 were as follows:

Date of issue	May 26, 1948	May 15, 1951	May 15, 1951
Remaining term	Jan 1, 1953 to May 24, 1953	Jan 1, 1953 to May 18, 1956	Nov 18, 1955 to May 18, 1956
Number of shares	7,370	23,950	27,000
Price per share	\$11.00	\$19.35	\$19.35

The terms of these options provide that the holders thereof shall be entitled (as a result of the stock dividend) to receive, for each ten shares purchased at their option price, one additional share at no increase in the aggregate price.

**NOTE 8.**

Rent commitments under various leases amounted to approximately \$3,000,000 at December 31, 1952 and in addition a lease was entered into in January 1953 with a commitment of approximately \$6,000,000. These commitments aggregating \$9,000,000 are payable as follows: 1953 - \$900,000, 1954 - \$950,000, 1955 - \$800,000, 1956 - \$700,000, 1957 - \$500,000 and thereafter in declining amounts to 1976.

## THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY

The following features are of interest in viewing the financial statements and accompanying notes taken from the 1952 annual report of The Atchison, Topeka, and Santa Fe Railway Company.

Three financial statements for the year are presented under the headings, Comparative General Balance Sheet, Income Account, and Profit and Loss Accounts. All of the statements for the company are presented in comparative form.

**Comparative General Balance Sheet.** Road and equipment items and other long-term items are listed first in the asset section and invested capital and funded debt are listed first in presenting equities, primary attention thus being directed to these items. Long-term assets are followed by a listing of current assets and other miscellaneous assets forming a relatively small part of the asset total; capital stock and funded debt are followed by current liabilities, other miscellaneous items, and then corporate surplus. Corporate capital is thus reported in divided form being included in the first and last parts of the "liability" side of the balance sheet.

**Income Account.** The income statement or "account" is prepared in multiple step with a series of revenue and income designations: (a) net revenue from railway operations, (b) railway operating income, (c) net railway operating income, (d) total income carried forward, (e) income before interest on funded debt, (f) net income, and finally (g) credit balance carried to profit and loss.

**Profit and Loss Account.** The "profit and loss account" summarizes the change in the "Profit and Loss — Balance" reported under Corporate Surplus on the comparative balance sheet. The summary includes miscellaneous and presumably nonrecurring debits and credits as well as dividend paid amounts in reconciling beginning and ending balances.

**Additional Summaries and Statements.** A number of accompanying summaries and statements are given in the corporate annual report for 1952 that are not reproduced here. Among these are included the following:

- (1) investment in road and equipment;
- (2) additions to equipment, year 1952;
- (3) equipment owned, Dec. 31, 1952;
- (4) investments in terminal and collateral companies;
- (5) funded debt — issued and outstanding;
- (6) reduction in funded debt — year 1952;
- (7) comparative statistics — revenues, expenses, taxes, interest and income since January 1, 1896.

## THE ATCHISON, TOPEKA AND SANTA

Comprising The Atchison, Topeka and Santa Fe Railway Company; Gulf, Colorado

## COMPARATIVE GENERAL BALANCE

ASSETS	Balances	
	Dec 31, 1952	Dec 31, 1951
<b>ROAD AND EQUIPMENT</b>		
Road	\$ 962,736,599	\$ 947,135,578
Equipment	645,368,202	611,480,883
TOTAL (see page 26)	1,608,104,801	1,558,616,461
Accrued depreciation—Road	61,667,250	57,405,864
Accrued depreciation—Equipment	289,279,619	287,944,761
Accrued amortization of defense projects— Road	16,328,267	16,553,250
Accrued amortization of defense projects— Equipment	88,332,850	88,398,894
Investment in transportation property less recorded depreciation and amortization	1,152,496,815	1,108,513,692
* INVESTMENTS IN TERMINAL AND COLLATERAL COMPANIES (see page 32)	37,605,868	35,328,153
MISCELLANEOUS PHYSICAL PROPERTY	24,046,066	23,959,161
Accrued depreciation	4,724,468	4,522,259
Investment in miscellaneous physical prop- erty less recorded depreciation	19,321,598	19,436,902
* VOLUNTARY BOND RETIREMENT FUND (see page 34)	\$1,213,530	
Less The AT&SF Ry Co issues	1,213,500	30
* UNITED STATES GOVERNMENT BONDS	3,172,356	3,172,356
* OTHER INVESTMENTS	353,366	801,324
	1,212,950,033	1,167,252,427
<b>CURRENT ASSETS</b>		
* Cash	36,143,972	36,630,864
* United States Treasury notes	86,468,200	59,000,000
* United States Treasury notes—Increment	1,634,571	456,600
* United States Treasury bills	17,894,308	30,174,192
* Other temporary cash investments	115,080	115,000
* Special deposits	343,698	306,150
* Loans and bills receivable	2,625	828
Traffic and car service balances—Dr	8,810,098	7,247,512
Agents and conductors	5,740,792	5,049,679
Miscellaneous accounts receivable	23,516,884	26,376,981
Material and supplies	56,406,315	61,548,226
Interest and dividends receivable	86,850	118,393
Accrued accounts receivable	7,287,401	9,029,500
Other current assets	686,741	852,493
	245,137,535	236,906,418
<b>DEFERRED ASSETS</b>		
Working fund advances	517,734	470,881
Other deferred assets	2,501,048	1,814,291
	3,018,782	2,285,172
<b>UNADJUSTED DEBITS</b>		
Prepayments	315,740	481,834
Other unadjusted debits	1,288,345	1,350,952
	1,604,085	1,832,786
<b>Total assets</b>	<b>\$ 1,462,710,435</b>	<b>\$ 1,408,276,803</b>

\* As to these items in the above balance sheet of The Atchison, Topeka and Santa Fe Railway Company System, we report that as of December 31, 1952 we received confirmations from the depositories or examined the cash, stock, bonds and other securities corresponding to all such amounts recorded on the books of account as at that date

Chicago, Illinois February 25, 1953

PRICE WATERHOUSE &amp; CO.

## FE RAILWAY COMPANY—SYSTEM

and Santa Fe Railway Company, and Panhandle and Santa Fe Railway Company  
SHEET, DECEMBER 31, 1952 AND 1951

LIABILITIES	Balances	
	Dec 31, 1952	Dec 31, 1951
<b>CAPITAL STOCK</b>		
Outstanding (see page 31)	\$ 366,878,800	\$ 366,878,800
Premium on capital stock	717,800	717,800
<b>FUNDED DEBT</b>		
Bonds	198,405,000	199,660,000
Equipment obligations	2,520,163	3,892,496
Total outstanding (see page 34)	200,925,163	203,552,496
<b>CURRENT LIABILITIES</b>		
Audited accounts and wages payable	30,414,438	28,735,877
Miscellaneous accounts payable	7,853,535	7,254,860
Interest matured unpaid	304,586	326,614
Dividends matured unpaid	343,698	306,150
Unmatured interest accrued	2,480,686	2,496,097
Unmatured dividends declared	9,171,970	7,958,440
Accrued accounts payable	5,812,587	8,352,111
Taxes accrued	76,156,616	57,308,505
Other current liabilities	2,630,818	2,634,981
	135,168,934	115,373,635
<b>DEFERRED LIABILITIES</b>	3,396,934	2,756,769
<b>UNADJUSTED CREDITS</b>		
Accrued depreciation—Leased property	10,106	16,215
Other unadjusted credits	11,327,718	10,100,125
	11,337,824	10,116,340
<b>CORPORATE SURPLUS</b>		
Additions to property through income and surplus	83,121,014	83,121,014
Funded debt retired through income and surplus	533,625	533,625
Voluntary Bond Retirement Fund—Appropriations	1,213,530	
Other Corporate Surplus	528,666	517,093
	85,396,835	84,171,732
<b>PROFIT AND LOSS—Balance</b>	658,888,145	624,709,231
	744,284,980	708,880,963
<b>Total liabilities</b>	<b>\$ 1,462,710,435</b>	<b>\$ 1,408,276,803</b>

### THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY—SYSTEM

Comprising The Atchison, Topeka and Santa Fe Railway Company; Gulf, Colorado and  
Santa Fe Railway Company; and Panhandle and Santa Fe Railway Company

#### INCOME ACCOUNT

Years ended December 31, 1952 and 1951

	1952	1951
<b>RAILWAY OPERATING REVENUES.</b>		
Freight .....	\$ 491,592,157	\$ 466,225,449
Passenger .....	57,539,364	52,578,289
Mail .....	24,433,100	25,041,367
Express .....	10,286,814	7,224,857
Miscellaneous .....	20,660,625	19,511,746
	<u>604,512,060</u>	<u>570,581,708</u>
<b>RAILWAY OPERATING EXPENSES:</b>		
Maintenance of way and structures .....	87,464,655	92,820,726
Maintenance of equipment .....	108,410,742	106,095,169
Traffic .....	14,016,398	13,660,585
Transportation—Rail line .....	188,198,841	189,972,176
Miscellaneous operations .....	12,704,309	11,868,973
General expenses .....	12,572,826	11,872,695
	<u>423,367,771</u>	<u>426,290,324</u>
Net revenue from railway operations .....	181,144,289	144,291,384
<b>RAILWAY TAX ACCRUALS (see page 45) .....</b>	<b>109,544,300</b>	<b>70,019,854</b>
Railway operating income .....	<u>71,599,989</u>	<u>74,271,530</u>
Rent from other equipment .....	1,795,503	889,421
Joint facility rent income .....	1,385,432	1,366,841
	<u>3,180,935</u>	<u>2,256,262</u>
Hire of freight cars—Debit balance .....	2,213,026	1,802,247
Rent for other equipment .....	694,746	570,085
Joint facility rents .....	2,499,042	2,542,350
	<u>5,406,814</u>	<u>4,914,682</u>
Net equipment and joint facility rents .....	<u>2,225,879</u>	<u>2,658,420</u>
Net railway operating income .....	<u>69,374,110</u>	<u>71,613,110</u>
<b>OTHER INCOME:</b>		
Revenues from miscellaneous operations .....	88,104	86,867
Income from lease of road and equipment .....	79,419	79,899
Miscellaneous rent income .....	631,907	586,087
Income from nonoperating property .....	684,872	110,963
Dividend income .....	7,106,943	7,591,075
Interest income .....	2,008,924	1,978,095
Release of premiums on funded debt .....	.....	620
Miscellaneous income .....	276,781	282,988
	<u>10,876,950</u>	<u>10,716,594</u>
Total income carried forward .....	<u>\$ 80,251,060</u>	<u>\$ 82,329,704</u>

**THE ATCHISON, TOPEKA AND SANTA FE RAILWAY  
COMPANY—SYSTEM**

**INCOME ACCOUNT**

(Concluded)

	1952	1951
Total income brought forward	\$ 80,251,060	\$ 82,329,704
MISCELLANEOUS DEDUCTIONS		
Expenses of miscellaneous operations	67,750	57,839
Taxes on miscellaneous operating prop- erty	5,677	5,118
Rent for leased roads and equipment	1,641	4,897
Miscellaneous rents	218,525	189,243
Miscellaneous tax accruals	427,013	414,456
Separately operated properties—Loss	16,354	31,958
Interest on unfunded debt	23,221	37,740
Maintenance of investment organization	1,365	1,378
Miscellaneous income charges	731,512	132,330
	1,493,058	874,959
Income before interest on funded debt	78,758,002	81,454,745
Interest on funded debt	8,020,297	8,108,967
Net income	\$ 70,737,705	\$ 73,345,778
Income appropriated to Voluntary Bond Retirement Fund	1,213,530	
Credit balance carried to Profit and Loss	\$ 69,524,175	\$ 73,345,778

**PROFIT AND LOSS ACCOUNT**

TO DECEMBER 31, 1952

Balance brought forward from December 31 1951	\$624,709,231
Credit balance from income, as above	69,524,175
	\$694,233,406
DIVIDEND APPROPRIATIONS OF SURPLUS	\$ 35,333,360
Div No                      Paid                      Amount	
Preferred Stock	
107 August 1, 1952	\$ 3,104,320
108 February 2, 1953	3,104,320
Common Stock	
157 June 2, 1952	4,854,120
158 September 2, 1952	6,067,650
159 December 8, 1952	6,067,650
160 March 2, 1953	6,067,650
Extra December 8, 1952	6,067,650
	\$ 35,333,360
Miscellaneous debits and credits—net debit	11,901
	35,345,261
Balance carried to general balance sheet	\$658,888,145

**GRANITE CITY STEEL COMPANY**

The 1952 annual report for the Granite City Steel Company presents financial statements prepared in conventional forms, including a Consolidated Statement of Financial Position, a Consolidated Statement of Operations, and a Consolidated Statement of Changes in Common Stockholders' Equity. In addition, the report includes statements summarizing operations and financial position in simplified form. The simplified statements are presented on pages 937 and 938. The statement on page 937, "How Our Money Was Used In 1952," reports a "favorable balance, or net income" of \$4,985,954, which is the same as the "net income for the year" as developed on the formal Consolidated Statement of Operations. The Simplified Statement of Financial Position on page 938 concludes with a "net ownership of all stockholders" of \$51,444,058, which is the same as the balance of "stockholders' equity" as developed on the formal Consolidated Statement of Financial Position. The formal statements are not reproduced here.

# GRANITE CITY STEEL COMPANY

## HOW OUR MONEY WAS USED IN 1952

### WE RECEIVED:

From sales to our customers  
From refund of 1951 excess profits tax  
Other income

\$74,587,639  
1,384,208  
73,098  
\$76,044,945

### OUR COSTS FOR THE YEAR WERE:

Cost of raw material, supplies, power, services, and other expenses  
Cost of human energy (wages, salaries, and other employee benefits)  
Cost of tools wearing out (depreciation)  
Cost of using property of others (rent)  
Cost of using money of others (interest)  
Cost of government (taxes)

\$44,615,152  
18,268,752  
2,396,131  
403,828  
883,534  
4,491,594  
\$71,058,991

### THIS LEFT A FAVORABLE BALANCE, OR NET INCOME OF:

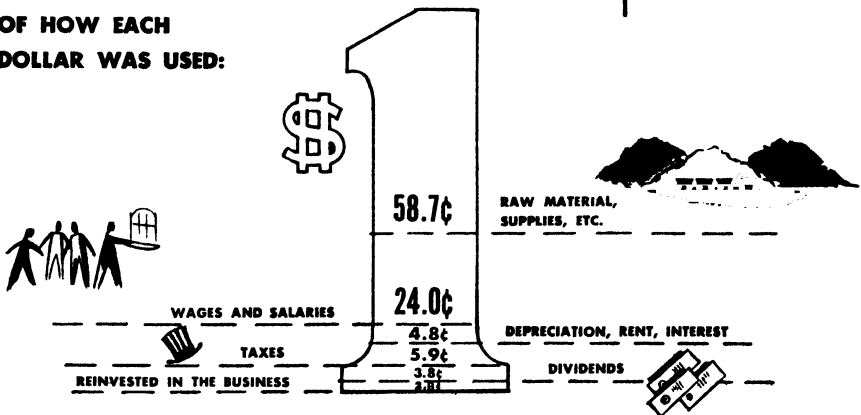
Stockholders were paid, for the use of their money and for their risk in providing the buildings, machinery, equipment, etc (dividends paid in cash and in common stock)

\$ 4,985,954

Leaving a balance reinvested in the business

2,884,796  
\$ 2,101,158

### HERE IS A BREAKDOWN OF HOW EACH DOLLAR WAS USED:



# GRANITE CITY STEEL COMPANY

## Simplified statement of financial position

AS AT DECEMBER 31, 1952

**THIS IS THE CAPITAL WE WORK WITH:**

Cash in banks and on hand	\$ 8,077,168	
Due from customers for our products	5,477,461	
Federal excess profits tax refund	1,384,208	
Inventories of materials and products for sale to customers	19,162,197	
Insurance premiums paid in advance	225,684	
In terms of cash, the above amounts to		\$34,326,718

**FROM THE ABOVE WE MUST PAY:**

Vendors for materials, supplies, power, and services	\$ 8,088,570	
Employees for last half December wages and 1953 vacations	1,196,065	
Banks for loan payments due in 1953	5,990,625	
Federal and local governments for taxes	3,491,295	
Others for sundry expenses	431,042	
		19,197,597

THE NET DAY-TO-DAY CAPITAL, OR ASSETS,  
USED IN THE BUSINESS ARE

\$15,129,121

**HERE ARE THE MANUFACTURING TOOLS WE WORK WITH:**

Real estate, buildings, machinery, and equipment—Cost	\$83,412,619	
Less: Estimated cost of wear and exhaustion of tools (depreciation)	17,812,153	
	\$65,600,466	
Improvements to open hearth facilities leased from government	490,209	66,090,675
Sundry other assets used in the business and expenses allocable to future years		1,279,717
<b>TOTAL NET ASSETS USED TO PROVIDE JOBS FOR OUR WORKERS</b>		<b>\$82,499,513</b>

Against the foregoing, we have the following obligations payable over a long term:

Bonds to insurance companies	\$20,000,000
Notes to banks	8,009,375
Pensions to employees	689,080
	\$28,698,455

In addition, we have provided for:

Future federal income taxes	2,082,000
Maintenance and repairs	275,000
	\$1,055,455

IN TERMS OF MONEY, THIS IS THE NET  
OWNERSHIP OF ALL STOCKHOLDERS

\$51,444,058

PREFERRED STOCKHOLDERS' OWNERSHIP  
(121,376 SHARES)

Per Share  
\$100.00

Total  
\$12,137,600

COMMON STOCKHOLDERS' OWNERSHIP  
(1,379,045 SHARES)

\$ 28.50

\$39,306,458

# INDEX

## A

Accommodation endorsements, 317  
 Account form, of balance sheet, 15;  
 of balance sheet, illustrated, 16-  
 17, 123; of income statement, 35  
 Accounting, accrual basis, 99, and  
 the corporation, 2, as an art, 3;  
 as matching process, 5, cash  
 basis, 99; defined, 2, need for  
 appreciation of, 1  
 "Accounting Concepts and Stand-  
 ards Underlying Corporate Fi-  
 nancial Statements," 4  
 Accounting principles, *see* Account-  
 ing standards  
 Accounting process, illustrated, 109,  
 phases of, 55; steps in, 109, *see*  
*also* Bookkeeping process  
 Accounting Research Bulletins, 4  
*Accounting Review*, 4  
 Accounting Series Releases, 4  
 Accounting standards, 3; assump-  
 tion of stable monetary unit  
 under, 46, basic concepts in  
 measurement process, 41, con-  
 servative approach to, 12; con-  
 sistency in, 14, cost principle, 6,  
 full disclosure on, 14, going con-  
 cern assumption in, 41, objective,  
 verifiable evidence in, 41; position  
 of American Accounting Associa-  
 tion with respect to, 5, position of  
 American Institute of Account-  
 ants with respect to, 5  
 Accounting statements, 7; limita-  
 tions of, 47, preparation of, 124,  
 terminology of, 20 *see also*  
 Balance sheet, Comparative  
 statements, Earned surplus state-  
 ments; Income statements, State-  
 ment of application of funds,  
 Statement of changes in capital  
 Accounts, 57; adjusting, 127; bal-  
 ance form of, 57, balance form of,  
 illustrated, 59, closing, 127, con-  
 tra, 57; controlling, 59, expense,  
 subaccounts, illustrated, 66,  
 mixed, 57, negative, 57; nominal,  
 57; offset, 57, real, 57, reversing,  
 132, reversing, illustrated, 132,  
 T form of, 57, T form of, illus-  
 trated, 59  
 Accounts payable, classes of, 296  
 Accounts payable ledger, 58  
 Accounts receivable, accounting for  
 assignment of, illustrated, 192,  
 aging, 186, assigned, 317, assign-  
 ment of, 191, assignment of,  
 reported on the balance sheet,  
 193, composition of, 181, factor-  
 ing of, 191, pledge of, 191, sale of,  
 191, with credit balances, 183  
 Accounts receivable financing, 191  
 Accounts receivable ledger, 58  
 Accounts receivable turnover, 829  
 Accrual basis accounting, 99  
 Accrued dividends, purchase of  
 preferred stock with, 335  
 Accrued expenses, 297, accounting  
 for, 88, real and personal property  
 taxes as, 310, taxes as, 309  
 Accrued income, accounting for, 89  
 Accrued interest, on purchase of  
 securities, 163  
 Accumulation procedures, on bond  
 investments, 365, straight-line  
 and compound-interest methods  
 on investments, 366; United  
 States savings bonds, 376  
 Acid test ratio, 828  
 Additional markup, 272  
 Additions, to plant and equipment,  
 422  
 Adjusting data, compilation of, 114  
 Adjusting entries, illustrated, 127  
 Adjustments, in development of  
 statement of source and applica-  
 tion of funds, 858  
 Administrative expenses, defined,  
 31  
 Advance payments, on purchase  
 commitments, 282  
 Advances, 100, from customers on  
 purchase orders, 307  
 Aging receivables, 186  
 All-inclusive income statement,  
 arguments against, 33, arguments  
 for, 34, nature of, 32, position on,  
 of American Accounting Associa-  
 tion, 33  
 Allowance for bad debts, 184, ad-  
 justment based on accounts re-  
 ceivable, 185, adjustment based  
 on sales, 185, corrections in, 187  
 Allowance for decline in value of  
 marketable securities, 167  
 Allowance for inventory decline to  
 market, 249, reporting on bal-  
 ance sheet, 283  
 Allowance for maintenance and  
 repairs, 422  
 Allowance for purchases discount,  
 222  
 Allowance for sales discounts, 190  
 American Accounting Association  
 contributions of, 1, objectives of,  
 4, position of, on standards, 5  
 American Institute of Accountants,  
 contributions of, 3, objectives of,  
 1, position of, on standards, 5  
 Amortization, accelerated, on re-  
 deemable bond issues, 371; cost,  
 in periodic summary, 87, of good-  
 will, 516, of intangibles, 506  
 Amortization procedures, on bond  
 investments, 365, on bonds issued,  
 549, straight-line and compound-  
 interest methods on investments,  
 366, 551  
 Amortization schedules, of invest-  
 ments in bonds, 368, issuance of  
 bonds, 554  
 Analysis, of statements, *see* State-  
 ment analysis  
 Analysis sheet, to show effects of  
 errors on statements, 767-769  
 Application of funds statement, *see*  
 Statement of application of funds  
 Appraised surplus, *see* Revaluation  
 surplus, 15  
 Appraisal system of calculating de-  
 preciation, 455  
 Appraisals, depreciation following,  
 488, of properties acquired by  
 gift and discovery, 418, of prop-  
 erty acquired for issue of stock,  
 598, recorded in the accounts,  
 186, sale of assets after recording,  
 493; use of, 481; when appropri-  
 ate, 478  
 Appreciation, depreciation at cost  
 after asset, 489; depreciation  
 following asset, 488, recorded in  
 the accounts, 486; sale of assets  
 after recording, 493  
 Appropriated earned surplus, 15,  
 656, *see also* Earned surplus  
 reserves  
 Appropriations of surplus, 689  
 Arbitrary diminishing rates, applied  
 to cost method of calculating de-  
 preciation, 452  
 Articles of incorporation, 583

Assessed values, as basis for asset  
 cost apportionment, 412  
 Assessments, by corporation, 600,  
 on investment in stock, 336  
 Asset depreciation, in periodic sum-  
 mary, 87  
 Asset pledges, inventories, 283; of  
 accounts receivable, 191  
 Asset productivity rate, 838  
 Asset reserves, *see* Allowances  
 Assets, appreciation of, 486, de-  
 fined, 7, devaluation of, 185,  
 measurement of turnover of, 837,  
 order of, on balance sheet, 15,  
 rate earned on total, 838, ratio of  
 sales to, 837; replacement values  
 for, 479, sale of, after recording  
 appreciation on, 493, *see also*  
 Contingent assets, Current assets,  
 Fixed assets, Intangible assets;  
 Investments, Noncurrent assets,  
 Other assets; Plant and equip-  
 ment  
 Assigned accounts receivable, 191,  
 as contingent liabilities, 317  
 Authorization, of bonds, recording  
 in the accounts, 547; of stocks,  
 recording in the accounts, 595  
 Average excess earnings, capitaliza-  
 tion of, for goodwill measurement,  
 514  
 Average method, as applied to in-  
 ventory valuation, 224; evalua-  
 tion as inventory method, 229

## B

Bad debts, 87, adjustment based on  
 receivables, 185, adjustment  
 based on sales, 185, anticipation,  
 189, basis for estimates, 184; how  
 reported, 184, recognition at time  
 of loss, 188, 189  
 Balance form of account, 57; illus-  
 trated, 59  
 Balance sheet, 7, account form of,  
 15, account form of, illustrated,  
 123, appraisal value on the, 492,  
 capital on the, 705, classification  
 of items on, 8, 16, comparative  
 form of, 18, controlling interest in  
 stock reported on, 352, corporate  
 capital reported on, 657; corporate  
 form of, illustrated, 706-707,  
 deficit reported on the, 658; de-  
 veloping working capital balance,  
 illustrated, 18, disclosure of lease-  
 holds on, 518, discount on stock  
 reported on the, 658, equation of,  
 7, form of, 15, illustrated, 16-17,  
 investments reported on, 402,  
 land classified or the, 425, long-  
 term liabilities on the, 570; nature  
 of, 7; other measurements of, 837,  
 other titles of, 7; preparation of,  
 from incomplete data, 732; pre-  
 sentation of cash on, 169; pre-  
 sentation of cash overdrafts on,  
 320, presentation of contingent  
 liabilities on, 320; presentation of  
 current liabilities on, 320; pre-  
 sentation of inventories on, 282,  
 presentation of purchase commit-  
 ments on, 282; presentation of  
 receivables on, 200; presentation  
 of temporary investments on,  
 169; recording bonds payable on,  
 549; report form of, 15, 18; re-  
 porting of contingent liabilities  
 on, 371; reporting stock dividends

on, 671; reserves section on, 308; simplified report form of, 23; valuation of investments in stock on, 336; valuation of investments in bonds on, 375; working papers for corrected, illustrated, 776

**Balances, bank, reconciliation of, 154**

**Bank balances, reconciliation of, 154**

**Bank overdrafts, *see* Cash**

**Bank reconciliation statement, 154**

**Banker's ratio, 826**

**Base stock method, of inventory valuation, 232**

**Basic concepts, *see* Accounting standards**

**Bearer bonds, 362**

**Betterments, effects upon depreciation calculations, 477; of plant and equipment, 422**

**Board of directors, of corporation, 583**

**Bond conversion, 374**

**Bond indenture, 645**

**Bond interest, number of times requirements were earned, 840**

**Bond redemption, 373; disposition of premium on refunding, 566; through sinking fund, 392**

**Bond refunding, 566; treatment of unamortized discount and call premium, 566**

**Bond retirement, 557**

**Bond tables, 364**

**Bonds, calculation of cost of lot sold, 164; interest calculations on purchase of, 163; issued in exchange for plant and equipment, 416; kinds of, 361; sale of investment in, 164, 372; serial, 558; term, 558; transfer of ownership of, 362; unissued, presentation of, on balance sheet, 570; yield of, 363; yield tables, 364; *see also* Investments in bonds; Treasury bonds**

**Bonds-outstanding method, of amortization, 558**

**Bonds payable, 545; accounting for, 553; conversion of, on books of issuer, 563; entries for subscriptions, 548; issued at discount, 363, 546; issued at premium, 363, 546; issuing costs, 520, 550; methods of recording, 546; reacquisition prior to maturity, 555, 562; refunding, 566; reporting on balance sheet, 549; serial bonds, 558; surplus appropriations required by, 692**

**Bonus agreements, 303; calculation of obligations under, 304; types of, 304**

**Book inventory system, 215**

**Book value, calculation of, per share, 836; per share, 705**

**Bookkeeping, single entry and double entry, compared, 731; *see also* Double entry bookkeeping; Single entry bookkeeping**

**Bookkeeping process, adjusting and closing accounts in, 127; business papers, 56; compilation of adjusting data in, 114; illustrated, 109-132; kind of books of original entry, 56; machine recording methods in, 72; nature of, 100; periodic summary, adjusting accounts, 86; posting in, 113; preparation of accounting statements in, 124; preparation of post-closing trial balance in, 131; preparation of trial balance in, 113; preparation of work sheet in, 117; reversing accounts in, 132; steps in, 109**

**Bookkeeping records, nature of, 55**

**Bookkeeping system, defined, 55**

**Books of original entry, 56; illustrated, 60-72, 109-114; kinds of, 56; posting from, 113**

**Break-even point, analysis, practical applications of, 812; graphic presentation of, 811**

**Budgets, nature of, 159; *see also* Cash budget**

**Buildings, 426; cost apportionments to land and, 426; cost when constructed, 426; depreciation of, 426**

**Burden, *see* Overhead**

**Business papers, 56**

**Business year, natural, 833**

**By-laws, corporate, 583**

## C

**"Call" balances, on corporate subscriptions, 591**

**Callable bonds, 362**

**Capital, of corporation, 14; of corporation, presentation on balance sheet, 657; of partnership, 14; of sole proprietorship, 14; on the balance sheet, 705; working, defined, 8; *see also* Capital stock; Surplus**

**Capital expenditures, 410; carrying charges on land held as investment, 425; charges during period of organization and construction treated as, 421; interest during construction treated as, 420**

**Capital stock, 14; accounting for, illustrated, 594; apportionment of sales proceeds to different securities of issued, 597; assessments on, 600; capital upon corporation formation, 583; conversion of, on books of issuer, 636; defaults on stock subscriptions of, 594; exchange of business for, 601; exchanged for bonds, 563; exchanged for property, 598; legal value of, 584; no-par, 584, 586; par, 584, 586; payments on subscriptions, 592; recapitalization of, 638; recording issuance of, 593; sale of security units of, 596; stated value of, 584; subscriptions at discount, 591; subscriptions at premium or amount in excess of stated value, 591; subscriptions to, 183; *see also* Common stock; Preferred stock**

**Capital surplus, 656; defined, 15**

**Capitalization of earnings, for goodwill measurement, 513**

**Cash, composition of, 148; control of, 149; double record of, 152; internal check, 149, 150; misappropriation of, 149; misrepresentation of condition of, 158; nature of, 147; overdrafts of, 159; overdrafts of, presentation on balance sheet, 320; presentation of, on balance sheet, 169; shortages of, 158**

**Cash basis accounting, 99**

**Cash budget, 159; illustrated, 161; preparation of, 161**

**Cash discounts, allowed, treatment, 222; on purchases of merchandise, 32; on sales of merchandise, 32; taken, effect upon inventory costing, 220; taken, treatment on income statement, 221**

**Cash dividends, availability of paid-in surplus as basis for, 661; entries for declaration and payment of, 666; on investment, date for recognition of, 337; on investment, income tax requirements as to recognition for, 338; payable, 297**

**Cash funds, petty cash, 152**

**Cash payments journal, illustrated, 65, 69; posting from, 66**

**Cash payments records, 65; illustrated, 65, 69**

**Cash receipts journal, 61; illustrated, 63; posting from, 61**

**Cash receipts records, 60; illustrated, 61, 63**

**Cash surrender value, of life insurance policy, 397; accounting for, 397**

**Casualties, repairs arising from, 422**

**Certificate, accountant's, 1**

**Certificates of necessity, 475**

**Change in inventory valuation procedures, methods of disclosure, 282**

**Charges, deferred, *see* Deferred charges**

**Charter, corporate, 583**

**Check kiting, 149**

**Check records, posting from, 71**

**Check register, illustrated, 71**

**Claims, *see* Liabilities**

**Claims on Containers Outstanding account, 429**

**Classification, of balance sheet items, 8, 16**

**Clean surplus theory, 33**

**Close corporation, 584**

**Closing entries, illustrated, 127**

**Coinurance clause, 522; calculation of recoverable amounts under, 523**

**Collateral trust bond, 361**

**Combined income and earned surplus statement, arguments for, 35; form of, 40; illustrated, 40; nature of, 35**

**Common-dollar statements, 47**

**Common equity, rate earned on, 841**

**Common-size statements, 805**

**Common stock, 584; computation of book value per share of, 708; computation of earnings per share of, 712; kinds of, 590; per share earnings on, 841**

**Comparative form, of balance sheet, 18**

**Comparative statements, desirability of, 795; horizontal analysis, 796; vertical analysis, 802**

**Compilation of adjusting data, 114**

**Composite depreciation, 454**

**Compound-interest method, of amortization of bond premium and accumulation of discount by investor, 366; of amortization of bond premium and discount on bonds payable, 551; of amortization of premium and discount on serial bonds outstanding, 558**

**Condition, statement of, 7**

**Condition per cent, meaning of, 481**

**Conditional sales contract, acquisition of plant and equipment by, 413**

**Conservation, meaning of concept, 42**

**Consignment, merchandise on, as part of inventories, 217**

**Consistency, meaning of concept, 44**

**Consolidated statements, 352**

**Construction contracts, long-term, income tax requirements for, 255**

**Containers, *see* Returnable containers**

**Containers Expense account, 429**

**Contingent asset, 419**

**Contingent liabilities, 317; accommodation endorsements as, 317; additional taxes as, 318; assigned accounts receivable as, 317; calling for surplus appropriations, 319; customer service guarantees as, 318; guarantee of debt service of affiliated companies as, 318; guarantees against price declines as, 318; items includable as, 13;**

lawsuits pending as, 318; methods of reporting, 318; notes receivable discounted as, 317; on notes discounted, 196; presentation on the balance sheet, 320; reporting of, on balance sheet, 571

Contra account, 57

Contra balances, with creditor accounts, 183; with customer accounts, 183

Contract rate on bonds, 363

Contracts, long-term constructions, income tax requirements for, 255; uncompleted, profit measurements on, 252

Controlling account, 59; expense control, illustrated, 67; reconciliation of, 59

Controlling interest in stock, reported on the balance sheet, 352; **see also** Investments in stock

Conversion of bonds, on books of investor, 374; on books of issuer, 563

Conversion of stocks, on books of investor, 348; on books of issuer, 636

Convertible bonds, 362

Convertible preferred stock, 589

Convertible stock, investment in, 334

Copyrights, 509

Corporate capital, as reported on balance sheet, 657

Corporate charter, 583

Corporate form of balance sheet, illustrated, 706-707

Corporate readjustment, 484

Corporation by-laws, 583

Corporations, accounting and, 2; as dominant form of organization, 2; board of directors of, 583; capital on the balance sheet for, 657; classified, 583; formation of, 583; minute book of, 583

Correcting entries, for errors in depreciation, 473; for errors in past depreciation, 474; for failure to provide allowance for bad debts, 766; for failure to record accrued expense, 764; for failure to record accrued income, 761; for failure to record deferred expense, 761; for failure to record deferred income, 763; for failure to record depreciation, 765; for misstatement of merchandise inventory, 760; for misstatements of merchandise purchases, 760; for overstatement of deferred expense, 762; for overstatement of deferred income, 766; procedures in making, 759

Cost, as valuation procedure for inventories, 223; as valuation procedure for securities, 166; defined, 30; of plant and equipment, 411

Cost amortization, in periodic summary, 87

Cost method, applied to controlling interest in stock, 349

Cost of goods sold, calculation of, from incomplete data, 734; defined, 31

Cost of goods manufactured, 31

Cost of goods manufactured schedule, **see** Manufacturing schedule

Cost or market, whichever is lower, 11; as applied in accounts for inventories, 247; as applied to inventory valuation, 243; as applied to valuation of marketable securities, 166; evaluation as inventory valuation procedure, 240; methods applicable to inventory valuation, 245

Cost principle, 6

Costs, 6; departures from, when permitted, 478; organization,

517, 600; processing, 276; standard, 233; **see also** Developmental costs; Experimental costs; Improvement costs; Moving costs; Rearrangement costs

Coupon bonds, 362

Credit, 56

Creditor accounts, with contra balances, 183

Credits, **see** Deferred credits

Cumulative preferred stock, 588; reporting dividends in arrears on, 297, 673

Current assets, defined, 8; items includible as, 8; items not includible as, 9; prepaid items includible as, 9; valuation of, 10

Current items, of balance sheet, 8

Current liabilities, 295; accrued expenses as, 297; bonus agreements as, 303; cash dividends payable, 297; current maturities of long-term obligations, 297; defined, 10; estimated items, 308-317; grouping of, 295; income tax withholding as, 301; items includible as, 8; items not includible as, 10; nature of, 295; notes and accounts, 296; payroll taxes as, 299; pensions as, 305; prepaid income reportable as, 307; presentation on the balance sheet, 320; sales taxes payable as, 298; valuation of, 11

Current operating performance statement, arguments against, 35; arguments for, 33; nature of, 32; position on, of American Institute, 33

Current ratio, 826

Customer accounts, with contra balances, 183

Customer premium offers, 312

Customers' notes, discounting, 193

**D**

Dated earned surplus, 663; period for disclosure of, 664

Debenture bond, 361

Debit, 56

Debt, long-term, items includible as, 12; reporting current maturities of, 297; **see also** Long-term debt

Deferred charges, 520; items includible as, 12

Deferred credits, 569; items includible as, 12

Deferred expenses, accounting for, 90, how classified, 9, 521

Deferred income, accounting for, 90

Deferred payment plan, on purchase of plant and equipment, 413

Deficit, 15; as reported in capital section, 658

Demolishment costs, 426

Depletion, 456; accounting for, illustrated, 459; distinguished from depreciation, 456; effect of, for purposes of dividends, 458; factors in arriving at, 457; recording, 457

Deposits, 401; in sinking fund, 388

Depreciation, and problem of increased replacement costs, 493; appraisal systems of, 455; arbitrary diminishing rates applied to cost method of, 452; as related to property replacement, 455; calculation of, from incomplete data, 737; causes of, 441; changes in estimates, 471; composite method, 454; effects of betterments upon calculations of, 477;

entries to record, 444; evaluation of reducing-charge methods, 452 factors in arriving at, 443; fixed percentage applied to diminishing book value method, 450; functional factors, 442; in periodic summary, 87; methods for calculation of, 445; nature of, 441; of buildings, effect on, of asset retirement costs, 496; of buildings, effect on, of salvage recoveries, 426; on appraisal values after asset appreciation, 491; on cost after asset appreciation, 489; on property item to date of exchange, 414; physical factors, 441; productive-output method of, 448; recording changes in estimates, 473; reducing-charge methods, 449; reducing fractions applied to cost method of, 451; replacement system of, 455; retirement systems of, 455; service-hours method of, 447; straight-line method of, 445; subsidiary records for calculation of, 444; sum of life digits method, 451; under certificates of necessity, 475

Deteriorated goods, 250

Disvaluation, as part of corporate readjustment, 484; recorded in the accounts, 483

Developmental costs, 521

Direct labor, 214

Direct materials, 214

Discount on bonds, accumulation by investor, 366; amortization by issuer, 551; disposition of, on refunding, 566; on investor's books, 363; on issuer's books, 549

Discount on stock, as reported in capital section, 658; on issuer's books, 599

Discounting customers' notes, 193

Discounts, anticipation of, on accounts receivable, 189; on stocks and bonds issued in exchange for properties, 416; on stock subscriptions, 591; **see also** Cash discounts; Trade discounts

Discovery, of valuable resources, 420

Dishonored notes, 197; payment of, 197

Distribution of earnings, summary of, 842

Dividends, 337; accrued, 335; availability of paid-in surplus as basis for, 661; date for recognition of liability on corporate records, 674; extra, 674; extraordinary, 674; for companies with wasting assets, 458; formal announcement of, 674; guaranteed by party other than issuer, 587; in arrears, 673; in arrears on cumulative preferred stock, 297; kinds of, 664; on no-par stock, 674; on preferred stock, 673; recorded, on books of stockholders, 337; reported, as disposition of earnings, 675; requirements in declaration of, 665; source of, 675; **see also** Cash dividends; Property dividends; Scrip dividends; Stock dividends

Dividends payable, cash, 297; stock, 297

Dollar changes, in horizontal analysis of statements, 796

Domestic corporation, 584

Donated surplus, 656; arising from treasury stock donations, 629; from property donation, 418

Donations, of treasury stock, 629; of treasury stock, recording, 630

Double entry bookkeeping, change from single entry to, 742

Double record, of cash, 152

## E

Earned surplus, 15, 656; appropriated, 656; correction of, for misstatements of past periods, 770; dated, 662; free, 656; sources of, 662; unappropriated, 656

Earned surplus appropriations, relating to contingent claims, 319, to meet asset replacement needs, 492

Earned surplus reserves, 15, 690; classified, 691; for acquisition of treasury stock, 628; for bond sinking fund, 395; for general contingencies, 695; for possible future losses, 694; for possible inventory decline, 696; funded, 693; objections to, 700; relating to corporate obligations, 692; relating to stock reacquisition, 692; relating to stock redemption plans, 694; reporting, for acquisition of treasury stock, 628; to describe business purposes served by retained earnings, 700; to reflect contractual restrictions on use of surplus, 690; to reflect discretionary action by board of directors in presentation of earned surplus, 691; to reflect legal restrictions on use of surplus, 690; under self-insurance plans, 698

Earned surplus statement, 7; form of, 39; illustrated, 39, 40; nature of, 30; to accompany income statement prepared in all-inclusive form, 705; to accompany income statement prepared in current operating performance form, 703

Earnings, average excess, capitalization of, for goodwill measurement, 514; distribution of, on creditors and ownership equities, 842; per share of stock, 712; per share, on common stock, 841; **see also** Retained earnings

Effective interest on bonds, 363, 546

Emergency facilities, 475

Employee withholdings, nature of, 67

Endorsements, accommodation, 317; without qualifications, 196; "without recourse," 195

Entries, correcting, **see** Correcting entries

Equation, accounting, 7

Equipment, plant and, **see** Plant and equipment

Equity, trading on, the, 831

Equity method, applied to controlling interest in stock, 350

Equivalent whole units, of goods processed, 280; of goods produced, 276

Errors, correction of, 757; in inventory values, 217; in past depreciation statements, 471; **see also** Misstatements

Estates, 402

Estimated liabilities, 308; customer premium offers as, 312; items includible as, 13; on tickets, tokens, and purchase orders outstanding, 315; reserve designation for, 308, taxes as, 309; under guarantees for service and replacements, 315; under pension plans, 306

Evidence, objective and verifiable, in accounting, 41

Exchange, accounting for acquisition of plant and equipment by, 413; acquisition of plant and equipment by, 413; tax requirements for acquisition of plant and equipment by, 415

Expenditures, capital, 410; revenue, 410; **see also** Capital expenditures

Expense controlling account, illustrated, 67

Expense ledger, 59

Expenses, accrued, 297; accrued, accounting for, 88, 90; calculation of, from incomplete data, 735; defined, 30; subaccounts, illustrated, 66; **see also** Administrative expenses; Deferred expenses; General expenses; Operating expenses; Other expenses; Selling expenses

Experimental costs, 521

Ex-rights, sale of stock, 342

Extra dividends, 674

Extraordinary dividends, 674

Extraordinary items, as defined by American Institute, 33; in calculation of profits for goodwill measurement, 512

Extraordinary repairs, 422

## F

Facilities, emergency, 475

Factor, 191

Factoring, 191

Factory overhead, **see** Overhead

Factory supplies, 214

Farm-price method, of inventory valuation, 252

Federal Insurance Contributions Act, 299

Federal obligations, interest calculations on, 164

Federal Social Security Act, 300

Federal Unemployment Insurance, 300

Federal Unemployment Tax Act, 300

Fees, received in advance, 307

Finished goods, 215; turnover of, 833

Fire insurance policies, 522; calculation of recoverable amounts under, 523; calculation of recoverable amounts under, when several policies held, 524

Fire loss, accounting for, 525; accounting for, illustrated, 526; self-insurance for, 698

First-in, first-out method, as applied to inventory valuation, 224; as applied to investments, 336; as applied to investments in bonds, 373; as applied to marketable securities, 164; evaluation as inventory method, 229

First-mortgage bond, 361

Fiscal period, use of natural business year for merchandise, 833

Fixed assets, 505; defined, 11; turnover of, 838

Fixed intangibles, 505; defined, 12

Fixed items, of balance sheet, 8

Fixed liabilities, defined, 12

Fixed percentage, applied to diminishing book value, method of calculating depreciation, 450

Fixed tangibles, 505; defined, 12

Floating fund system, **see** Petty cash

Footnotes on statements, **see** Notes accompanying statements

Foreign corporation, 584

Formulas, 511

Franchises, 509

Free surplus, 15, 656

Full disclosure, meaning of concept, 44

Fully secured obligations, 296

Funded reserve, 693; **see also** Earned surplus reserve

Funds, application of, 857; kinds of, 387; sources of, 857; **see also** Redemption funds; Sinking funds

Funds statement, **see** Statement of application of funds, 813

Furniture and fixtures, 428

## G

General expenses, defined, 31

General ledger, 58

General journals, 72

Gifts, of company's stock, 629; of property, 418; of property, acquisition contingent on certain conditions, 419

Going concern, meaning of concept, 41

Goods, deteriorated, 250; equivalent whole units of, processed, 280; equivalent whole units of, produced, 276; repossessed, 250

Goods in process, 214; turnover of, 833

Goodwill, 511; adjustments after acquisition, 516; calculated as years, purchase of excess earnings, 515; calculated by capitalization of average excess earnings, 514; calculated by capitalization of average net earnings, 513; methods of calculation of, 511

Gross profits, as percentage of cost, 268; as percentage of sales, 268; schedule of analysis of variation in, 808; when sales stated at percentage above cost, 269

Gross profits method, in developing inventory values for turnover calculations, 269; in estimating cost of inventory, 267

Gross profits test, 267

Guarantee, against price declines, 318; customer service, 318; for service and replacement, 315; of debt service of affiliated companies, 318

Guaranteed bonds, 362

Guaranteed dividends, 587

## H

Hand tools, 427

Holding company, 334

Horizontal analysis, extensions of, 825; of comparative statements, 796

## I

Imprest system, **see** Petty cash funds

Improvement costs, 521

Improvements, to plant and equipment, 422

Inadequacy of plant assets, 442

Income, accrued, accounting for, 89; calculation of, from incomplete data, 735; deferred, accounting for, 90; net, 6; on sinking fund investments, 388; **see also** Other income

Income bonds, 362

Income statements, 7, 29; account form of, 35; all-inclusive form of, 32; all-inclusive form of, illustrated, 704; content of, 31; current performance form of, 32; forms of, 35; illustrated, 37; other measurements of, 842; other titles of, 29; preparation of, from incomplete data, 733; report form of, 36; report form of, illustrated, 37, 125; simplified report of, 41; single-step form of, 36; working papers for corrected, illustrated, 774

Income taxes, on income statement, 32, 36

Income tax refunds, 183

Income tax requirements, allowance for depletion, 458; as to recognition of cash dividends received, 338; as to recognition of stock dividend, 341; for long-term

- construction contracts, 255; on acquisition of plant and equipment by exchange, 415; on bonds acquired at premium and discount, 373; on carrying charges on unimproved property, 426; relating to loss on bond refunding, 567; revisions in estimates for depreciation, 472, 474, 475
- Income tax withholdings, 299; entries for, 302; requirements of, 301
- Incomplete data, *see* Single entry bookkeeping
- Incorporation, articles of, 583; of partnership, 601; of partnership, accounting when new books opened, 603; of partnership, accounting when original books retained, 602
- Indenture, bond, 545
- Indirect materials, 214
- Initial costs of organization, treatment of, in accounts, 421
- Initial markup, 272
- Installment receivables, 182
- Insurance, *see* Fire insurance policies; Life insurance policies; Self-insurance
- Insurance Contributions Act, Federal, 299
- Intangible assets, nature of, 505; valuation of, 505
- Intangibles, amortization of, 506; complete write-off of, 507; fixed, 505; fixed, defined, 12; items includible as, 11; partial write-off of, 507; with limited term of existence, 506; without limited term of existence, 507; *see also* Copyrights; Formulas; Franchises; Goodwill; Leasehold improvements; Leaseholds, Organization costs; Patents, Special processes; Trade-marks; Trade names
- Interest, accrued, on purchase of securities, 163; during period of construction, 420; effective, on bonds, 363, 546; on purchase of plant and equipment, 413
- Interest calculation, on discounting of notes, 194; on purchase of bonds, 163; on purchase of federal obligations, 164; 6%; method, 194
- Interest income, income tax requirements where bonds acquired at premium or discount, 373; recognition of investments, 368; when bonds purchased "flat," 375
- Interests in estates, 402
- Interests in life insurance contracts, 333
- Interests in partnerships, 401
- Interests in real estate, 400
- Interests in trusts, 402
- Interim statements, 132
- Internal check, *see* Cash
- Inventories, accounting for perpetual, of manufacturing concern, 97; accounting for perpetual, of trading concern, 96; accounting for physical, of manufacturing concern, 94; accounting for physical, of trading concern, 92; advantages of retail inventory method, 271; application of lower of cost or market in the accounts, 247; book system, 215; composition of, 213; cost apportionment for items acquired for one lump price, 233; cost apportionment to joint products, 234; cost procedures, 213; effect of cost procedures compared, 227; effects of errors in recording position, 217; estimating cost, by gross profits method, 267; estimating procedures in valuation, 267; evaluation of cost or market procedure, 246; evaluation of cost procedures, 229; in periodic summary, 92; in the measurement of profit, 215; items entering into cost, 219; items included in, 216; limitations in arriving at market in applying lower of cost or market procedure, 243; lower of cost or market procedures evaluated, 250; manufacturing, valuation of, 275-281; methods of applying lower of cost or market procedure, 245, method of ascertaining quantities, 215; nature of, 213; passing of title, 216, 217; perpetual system, 215; physical system, 215; presentation on balance sheet, 282; recognition of where purchased at end of period, 296; reserve for possible decline in value of, 696; reserve for possible future market decline, 283; retail inventory method, 271-275; special valuation procedures, 243; specific identification of costs with goods on hand, 223; statement of disclosure of changes in valuation procedure, 282; valuation at average, 224; valuation at cost of latest purchases, 231; valuation at cost or market, whichever is lower, 243; valuation at first-in, first-out, 224; valuation at last-in, first-out, 226; valuation at market, 251; valuation at simple average of costs, 232; valuation at standard costs, 233; valuation by base stock method, 232; valuation by fair-price method, 252; valuation by percentage of completion method, 253; valuation by unit-livestock-price method, 252; valuation methods, 219-233; valuation of uncompleted contracts, 252; where pledged, reporting on balance sheet, 283; *see also* Merchandise inventory
- Investments, classifications, 333; items includible as, 11; miscellaneous, 396; nature of, 333; reported on balance sheet, 402; *see also* Advances; Cash surrender value of life insurance policy; Deposits; Interests in estates; Interests in real estate; Interests in Trusts; Investments in bonds, Investments in notes and mortgages, Investments in stocks, Miscellaneous investments; Sinking funds; Temporary investments
- Investments in bonds, 361; accelerated amortization on redeemable issues, 374; accumulation procedures in, 365; amortization procedures in, 365; amortization schedules, 368; conversion of holdings, 375; governmental issues, 362; kinds of, 361; long-term, accounting for, 368; permanent decline in value of, 375; redemption of holdings, 373; sale prior to maturity, 372; United States savings bonds, 376; valuation on balance sheet, 375; when purchased "flat," 375
- Investments in funds and miscellaneous items, 387
- Investments in land, 425
- Investments in notes and mortgages, 378
- Investments in partnership, 401
- Investments in stocks, 333; accounting for, 334; assessments on holdings, 336; common, 334; controlling interest, 349; controlling interest carried at cost, 349; controlling interest carried at equity basis, 350; controlling interest reported on balance sheet, 352; conversion of holdings, 348; cost apportionment to different shares acquired in one lump sum, 355; dividends on, 337; evaluation of methods for carrying controlling interest in, 351; exercise of sale of rights, 344; preferred, 334; receipt of liquidating dividend, 347; receipt of stock dividend on, 338; receipt of stock dividend different from that held, 310; receipt of stock rights, 342; redemption of holdings, 348; sale of, 339; stock split-ups, 341; tax requirements for, 353; tax requirements on exchange of holdings, 349; valuation of, 336; *see also* Cash dividends on investment; Stock dividend on investment
- Invoice record, *see* Purchases record
- J**
- Joint products, cost apportionment to, 234
- Journal, general, 72
- Journal of Accountancy, 4
- Journals, special, *see* Books of original entry
- L**
- Land, classified on balance sheet, 425; cost, 424; held for future use or resale, 425
- Lapping, 119
- Last-in, first-out method, as applied to inventory valuation, 226; evaluation as inventory method, 220
- Lawsuits pending, as contingent liabilities, 318
- Legal capital, corporate, 584; limitations upon recapitalization of stock in preservation of, 621
- Legal requirements, relating to surplus available for dividends, 665
- Legal value stock, 584
- Leasehold improvements, 519
- Leaseholds, 518; disclosure of, on balance sheet, 518
- Leases, 518
- Liabilities, defined, 8; nature of, 295, order of, on balance sheet, 15, ratio of owner's capital to, 831; secured, 296; *see also* Contingent liabilities; Current liabilities; Deferred credits; Estimated liabilities; Fixed liabilities; Long-term debt; Noncurrent liabilities; Other liabilities
- Liability reserves, *see* Estimated liabilities
- Life insurance policies, accounting for, 397; cash surrender value, 397; collection on, 398; loan value, 397
- Liquidating dividends, entries for, 672; nature of, 347, 672
- Loan value, of life insurance policy, 397
- Long-term debt, 545; items includible as, 12; ratio of owner's capital to, 835; reporting current maturities of, 297; *see also* Bonds payable; Deferred credits
- Long-term investments, *see* Advances; Interests in estates; Interests in life insurance contracts; Interests in partnerships; Interests in trusts; Investments, sinking funds
- Long-term items, of balance sheet, 8

Long-term liabilities, 545; on the balance sheet, 570; **see also** Bonds payable; Deferred credits  
Long-term notes, investments in, 375

Losses, from operations of early years, 521; on purchase commitments, 251; on self-construction, 418; surplus appropriations for possible future, 694; surplus reserve for possible inventory, 697  
Lower of cost or market, **see** Cost or market, whichever is lower

## M

Machine recording, 72  
Machine tools, 427  
Machinery and equipment, 427  
Maintained markup, 272  
Maintenance, of plant and equipment, 421  
Maintenance and repairs, as factor in depreciation policy, 442; establishment of allowance for, 422  
Manufacturing costs, 220  
Manufacturing expenses, **see** Overhead  
Manufacturing inventories, calculation of costs, 275; **see also** Inventories  
Manufacturing schedule, content of, 38; illustrated, 38, 126  
Manufacturing supplies, 214  
Margin, purchase of stock on, 334  
Markdown, 272  
Markdown cancellation, 272  
Market, cost or, whichever is lower, 11; **see also** Cost or market, whichever is lower  
Market rate on bonds, 363  
Market valuation, for inventories, 251  
Market valuation, for securities, 168  
Marketable securities, allowance for decline in value of, 167; calculation of lot sold, 164; recording purchase of, 163; recording sale of, 163; tax requirements on sale of, 167; valuation at cost, 166; valuation at cost or market, whichever is lower, 166; valuation at market, 168  
Markon, 272  
Markup, additional, 272; initial, 272; maintained, 272  
Markup cancellation, 272  
Matching process, 5; expression in money price, 6  
Memorandum entry, recording treasury stock by, 630; to record issue of stock rights, 632  
Merchandise in transit, 216  
Merchandise inventory, analysis of, 831; number of days' sale in, 832; turnover of, 831; **see also** Inventories  
Merchandise on consignment, 217  
Minute book, corporate, 583  
Miscellaneous investments, 396  
Mistatements, analysis sheet to summarize, 767-769; in recognition of bad debts, 766; intentional, 757; of accrued expense, 764; of accrued income, 761; of deferred expenses, 761; of deferred income, 763, 766; of depreciation, 765; of inventory position, 217; of merchandise inventory, 760; of merchandise purchases, 760; of past depreciation, 471; prevention of, 757; types of, 758; unintentional, 758  
Mixed accounts, 57  
Money price, expression of matching process in, 6  
Mortgages, investments in long-term, 378  
Motor vehicles, 428

Moving average method, as applied to inventory valuation, 225  
Moving costs, 521

## N

Natural business year, 833  
Necessity, certificates of, 475  
Negative account, 57  
Net income, 6; as defined by American Institute, 33; ratio of, to total capital, 830; statement accounting for variation in, 807; **see also** Earnings, per share of stock  
Net worth, and surplus, criticism of terminology, 20; **see also** Capital; Corporate capital  
Nominal accounts, 57; summarized, 58  
Nominal rate on bonds, 363  
Noncumulative preferred stock, 588  
Noncurrent assets, classification of, 11  
Noncurrent items, of balance sheet, 8  
Nonparticipating preferred stock, 588  
Nonstock corporation, 583  
No-par stock, 584, 586; dividends on, 674  
Normal operating cycle, defined, 9  
Normal stock method, of inventory valuation, 232  
Notes accompanying statements, cumulative dividends in arrears, 297; disclosure of business commitments by, 30; form of, 45, items includible in, 45; post-statement disclosures in, 46; relating to cumulative dividends in arrears, 673; relating to inventory valuation procedures, 282; relating to leaseholds, 518; relating to outstanding stock rights, 633  
Notes payable, classes of, 296  
Notes receivable, composition of, 181; contingent liability on discounting, 196; discounted, 193, 317; discounted, as contingent liabilities, 317; discounted, dishonored, 197; discounted, entries, 196, 198-199; discounted, payment after dishonor, 197; discounted "without recourse," 195; investments in long-term, 378

## O

Obsolescence of plant assets, 442  
Offset accounts, 57  
Offsets, in accounts, 19; when improper, 19  
Old-Age and Survivor Insurance, 299  
One hundred per cent statements, 805  
Open corporation, 584  
Operating cycle, normal, defined, 9  
Operating expenses, defined, 31  
Operating reserves, 308  
Ordinary stock dividends, 668  
Organization costs, 517, 600  
Original entry, books of, 56  
Other assets, items includible as, 12  
Other expenses, defined, 32  
Other income, defined, 32; from sinking fund, 392  
Other liabilities, 570; items includible as, 13  
Overdrafts, of cash, 159; **see also** Cash  
Overhead, 214; chargeable to self-construction of property item, 417  
Owner's capital, rate earned on, 839; ratio of, to liabilities, 834; ratio of, to plant and equipment, 835

## P

Paid-in surplus, 656; availability for dividends of, 661; improper charges to, 660; items includible as, 14; transactions giving rise to, 659; transactions resulting in reductions in, 660  
Paid-in surplus statement, 702  
Parent company, 334; accounting for investment in subsidiary, 349; advances from, 400  
Par stock, 584, 586  
Participating preferred stock, 588  
Partly secured obligations, 296  
Partnerships, accounting for interests in, 401; incorporation of, 601; incorporation of, when new books opened, 603; incorporation of, when original books retained, 602; investments in, 401  
Passing of title rule, for recognition of purchase, 217  
Patents, 508  
Patterns and dies, 428  
Payments, cash, records of, 65  
Payroll record, illustrated, 68  
Payroll taxes, 299; entries for, 302  
Pension agreements, 305; entries for, 306; position of American Institute in accounting for, 306; recognition of past services under, 306; under insurance company plans, 306; under self-administered plans, 306  
Percentage changes, in horizontal analysis of statements, 796  
Percentage of completion method, of profit recognition in terms of inventory valuation, 253  
Period, reporting, 7  
Periodic summary, accrued and deferred items, 88; adjusting accounts in, 86; asset depreciation in, 87; cost amortization in, 87; inventories, 92; probable uncollectible items in, 87; steps in, 80  
Permanent investments, **see** Advances to affiliates; Interests in estates; Interests in life insurance contracts; Interests in partnerships; Interests in trusts; Investments, sinking funds  
Perpetual inventories, accounting for, of manufacturing concern, 97; accounting for, of trading concern, 96  
Perpetual inventory system, 215  
Petty cash, fluctuating fund system, 153; imprest system, 152  
Petty cash funds, imprest system, 152  
Petty cash journal, 152  
Physical inventories, accounting for, of manufacturing concern, 94; accounting for, of trading concern, 92  
Physical inventory system, 215  
Plant and equipment, acquired in second-hand condition, 413; acquired under certificate of necessity, 475; acquisition by discovery, 420; acquisition by exchange, 413; acquisition by gift, 418; acquisition by issuance of non-interest-bearing securities, 417; acquisition by issuance of securities, 416; acquisition, use, and retirement of, 409; additions to, 422; betterments of, 422; composition of, 409; cost apportionment to different assets acquired for one lump sum, 412; depreciation and depletion, 441; improvements to, 422; items includible as, 11; maintenance of, 421; measurement of turnover of, 838; nature of, 409; purchase for cash, 412; purchase on deferred payment

plan, 413; ratio of owner's capital to, 835; ratio of sales to, 838; ratio of, to long-term debt, 835; repairs to, 422; retirements of, 423; revaluations of, 471; subsidiary records for, 430; use of, 411; valuation of, 411; **see also** Buildings; Furniture and fixtures; Land; Machinery and equipment; Motor vehicles; Patterns and dies; Returnable containers; Tools  
 Plant ledger, 58  
 Pledges, reporting on balance sheet, 570  
 Post-closing trial balance, illustrated, 131; preparation of, 131  
 Posting, from books of original entry, 113; from cash payments journal, 66; from cash receipts journal, 61; from check records, 71; from invoice records, 69; from purchases journal, 66; from sales journal, 61; from voucher register, 71; to subsidiary ledgers, 59  
 Post-statement disclosures, 46  
 Pre-emptive right, of stockholder, 584  
 Preferred dividends, number of times requirements were earned, 840  
 Preferred stock, 584; computation of book value per share of, 708, computation of earnings per share of, 712; convertible, 589, cumulative, 588; dividends on, 673; kinds of, 587; nature of preferences, 589; noncumulative, 588; nonparticipating, 588; redeemable, 589; redemption of, 619; redemption of, at amount in excess of issuing price, 395, 619; redemption of, at less than issuing price, 395, 620; redemption of, through fund of, 394; surplus appropriations relating to redemption of, 694  
 Preferred stock redemption funds, **see** Redemption funds  
 Premium, on bond redemption, 563; on stocks and bonds issued in exchange for properties, 416  
 Premium offers, on sales, 312; on sales, accounting for, 313  
 Premium on bonds, accelerated amortization, 374; amortization by investor, 365; amortization by issuer, 551; on investor's books, 363; on issuer's books, 549  
 Premium on stock, on issuer's books, 599; on subscription of, 591  
 Prepaid expenses, **see** Deferred expenses  
 Prepaid income, reportable as current liability, 307  
 Prepaid subscriptions income, 13  
 Price level, use in the accounts, 479, 480  
 Principles of accounting, **see** Accounting standards  
 Private corporation, 583  
 Processing costs, 276  
 Productive-output method of depreciation, 448  
 Productivity rate, on assets, 838  
 Profit and loss, determination of, from comparative balance sheets, 732  
 Property dividends, entries for, 667; nature of, 667  
 Proprietorship, defined, 8  
 Public corporation, 583  
 Purchase commitments, advance payments on, 282; possible losses on, reflected on the balance sheet, 283; presentation on the balance sheet, 282; recognition of losses on, 251  
 Purchase orders, advances from

customers on, 307; outstanding, accounting for, 315  
 Purchases discounts, lost, 222; **see also** Cash discounts  
 Purchases journal, illustrated, 65; posting from, 66  
 Purchases records, 65; check register, illustrated, 65, 71; invoice record, 68; invoice record, illustrated, 69; invoice record, posting from, 69; voucher register, illustrated, 71; voucher system, 70  
 Purchasing costs, on merchandise acquired, 220

Q

Quasi-reorganization, 484; dated earned surplus arising from, 663  
 Quick ratio, 828

R

Rate, earned on common equity, 841; earned on total assets, 838; earned on total owner's capital, 839  
 Ratio, acid-test, 828; banker's, 826, current, 826; in horizontal analysis of statements, 801; net income to total capital, 839, of owner's capital to liabilities, 834; of owner's capital to plant and equipment, 835; of plant and equipment to long-term debt, 835; of sales to assets, 837; of sales to plant and equipment, 838; quick, 828; working capital, 826  
 Raw materials, 214; turnover of, 833  
 Real accounts, 57, summarized, 58  
 Real estate, investments in, 400  
 Rearrangement costs, 521  
 Recapitalization, 638  
 Receipts, cash, records of, 60  
 Receivables, analysis of, 829; anticipation of discounts and other charges in valuation, 189; composition of, 181; nature of, 181, number of days' sales in, 830, presentation of, on balance sheet, 200; turnover of, 829; use of, in procurement of cash, 190; valuation of, 184; **see also** Accounts receivable; Cash dividends receivable; Installment receivables; Notes receivable; Subscriptions to bonds; Subscriptions to capital stock  
 Reciprocal accounts, 389  
 Reconciliation of bank balances, 154  
 Reconciliation statement, bank, 154  
 Recording, by machine, 72  
 Recording process, **see** Bookkeeping process  
 Redeemable preferred stock, 589  
 Redemption, preferred stock, 619  
 Redemption funds, 387; for reacquisition of preferred stock, 394  
 Redemption of bonds, on books of investor, 373; on books of issuer, 562; sinking fund for, 392  
 Redemption of stock, on books of investor, 348  
 Reducing-charge methods of depreciation, 449; arbitrary rates applied to cost method, 452; evaluation of, 452; fixed percentage applied to diminishing book value method, 450; reducing fractions applied to cost method, 451; sum of life digits method, 451  
 Reducing fractions applied to cost method of calculating depreciation, 451  
 Refunding of bonds, 566

Registered bonds, 362  
 Relative sales value method, as applied to inventory valuation, 233  
 Renewals, of plant and equipment, 422  
 Repairs, to plant and equipment, 422  
 Replacements, of plant and equipment, 422; of property, depreciation and, 455  
 Replacement guarantees, 315  
 Replacement system of calculating depreciation, 455  
 Replacement values, depreciation on, 488; meaning of, 481; surplus appropriations to meet, 492; use of, 481; use of, upon price level advances, 480; use of, upon price level declines, 479  
 Report form, of balance sheet, 15, 18; of balance sheet, simplified, 23; of income statement, 36, 37, 125  
 Reporting period, 7  
 Repossessed goods, 250  
 Reserve for bad debts, **see** Allowance for bad debts  
 Reserve for possible future inventory decline, 283, 696  
 Reserves, alternate designations for, 22; as appropriation of retained earnings, 689; as estimate of liability of uncertain amount, 689; as valuation account, 689; classification of, 21; kinds of, 689; operating, 308; recommendations of limitations in use of designation, 21; secret, 599; use of term, 689; **see also** Earned surplus reserves  
 Reserves section on balance sheet, 308; criticized, 22  
 Residual value, use of in calculating depreciation, 443  
 Resources and liabilities, statement of, 7  
 Retail inventory method, 271-275  
 Retained earnings, 656; **see also** Earned surplus  
 Retirement, of plant and equipment items, 423  
 Retirement system of calculating depreciation, 455  
 Returnable containers, accounting for, 429; nature of, 428  
 Revaluation surplus, 656, 661; arising from recognition of subsidiary profits and losses, 351; from discovery of valuable resources, 420; nature of, 15  
 Revaluations, of plant and equipment, 471  
 Revenue, 6; defined, 29  
 Revenue expenditure, 410  
 Reverse-split, of capital stock, 640  
 Reversing accounts, 132; illustrated, 132  
 Reversing entries, 132  
 Rights, **see** Stock rights  
 Rights-on, sale of stock, 342

S

Sale, of assets after appraisal, 493; of investment in bonds, 164, 372; of investment in stock, 164; of investment in stock, where several lots are held, 339  
 Sales, calculation of, from incomplete data, 734; defined, 31; ratio of, to assets, 837; ratio of, to plant and equipment, 838  
 Sales discounts, allowance for, 190; **see also** Cash discounts  
 Sales journal, illustrated, 60, 68; posting from, 61  
 Sales records, 60; illustrated, 60, 63

- Sales taxes payable, 298; calculation of, 298
- Savings, on self-construction, 418
- Schedule, manufacturing, 38; manufacturing, illustrated, 126; of analysis, of variations in gross profit, 808
- Scrip dividends, entries for, 667; nature of, 666
- Second-mortgage bond, 361
- Secret reserves, 599
- Secured bonds, 361
- Secured obligations, 296; reporting of, 297
- Securities, issued in exchange for plant and equipment, 416
- Securities and Exchange Commission, contributions of, 4
- Security units, sale, 596
- Self-construction, at cost in excess of contract price, 418; at cost less than contract price, 418; overhead as element of cost, 417; plant and equipment acquired through, 417
- Self-insurance, accounting procedures under plans for, 699; nature of, 698; reserves for, 698
- Selling expenses, defined, 31
- Serial bonds, 558; amortization by compound-interest method, 558; amortization by straight-line method, 558; amortization procedures, 558; amortization procedures when bond year and fiscal year do not coincide, 561; retirement prior to maturity, 560
- Series E bonds, accumulation procedures, 376
- Service guarantees, 315
- Service-hours method, of depreciation, 447
- Share, book value per, 705; earnings per, 712
- Shortages, cash, 158
- Short-term items, on balance sheet, 8
- Simplified report, of balance sheet, 23; of income statement, 41
- Single entry bookkeeping, 731; balance sheet preparation in, 732; calculation of cost of goods sold in, 734; calculation of depreciation in, 737; calculation of expenses in, 735; calculation of income items in, 735; calculation of sales in, 734; limitations of, 743; preparation of income statement in, 733; preparation of statements under, illustrated, 737 742; records in, 731; use of, 743
- Single-step income statement, 36; illustrated, 36
- Sinking funds, 387; accumulation of, 388; acquisition of own bonds through, 392; deposits in, 388; entries on corporation books and separate books for, 389; methods of accounting for, 389
- Six per cent method of calculating interest, 194
- Social Security Act, Federal, 300
- Solvency, definition of, 793
- Sound value, meaning of, 481
- Special journals, **see** Books of original entry
- Special processes, 511
- Special stock dividends, 668
- Split-down, of capital stock, 640
- Split-ups, on investor's books, 311; stock, on corporate books, 639
- Standard costs, method of inventory valuation, 233
- Standards, accounting, **see** Accounting standards
- State Unemployment Insurance, 300
- Stated capital, corporate, 584
- Stated value stock, 584
- Statement, accounting for variation in net income, 807; bank reconciliation, 154; earned surplus, 7; income, 7; of paid-in surplus, 701; **see also** Earned surplus statement; Income statement; Surplus statement
- Statement analysis, 793; analytical procedures in, 795; development of break-even point measurements in, 810; groups concerned with, 793; horizontal measurements in, 796; interpretation of results of, 842; preparation of statement accounting for variation of net income in, 807; primary inspection of statements preliminary to, 794; special ratios and measurements, 825; use of common-size statements in, 805; use of comparative data in, 793; use of comparative statements in, 795; vertical measurements in, 802; **see also** Ratio
- Statement of application of funds, 813, 851; adjustments for, illustrated, 861; adjustments in development of, 858; alternate working paper form in preparation of, 876; analysis of account changes in preparation of, 855; application of funds in, 857; illustrated, 854, 866, 874; nature of, 851; preparation of, 853; preparation of working papers for, 866-873; purpose of, 851; sources of funds in, 857; working papers for, illustrated, 856, 863, 868 869
- Statement of changes in capital, 7, 30
- Statement of condition, 7
- Statement of earnings, **see** Income statement
- Statement of operations, **see** Income statement
- Statement of profit and loss, **see** Income statement
- Statement of resources and liabilities, 7
- Statements, accounting, 7; preparation of, 124; common-dollar, 47; common-size, 805; consolidated, 352; footnotes on, 45; from incomplete data, 731; interim, 132; limitations of, 47; on cash and accrual bases, 99; 100%, 805; terminology of, 20; **see also** Balance sheet; Comparative statements; Cumulative statements; Earned surplus statement; Income statement; Statement of application of funds; Statement of changes in capital
- Stock, book value of shares of, 836; calculation of cost of lot sold, 165; capital, 14; cumulative preferred, reporting dividends in arrears on, 297; issued in exchange for plant and equipment, 416; sale of investment in, 164; treasury, 14; watered, 599; **see also** Capital stock; Investments in stock
- Stock assessments, on investment, 335
- Stock certificate book, 594
- Stock conversion, on books of investor, 348; on books of issuer, 636
- Stock corporation, 583
- Stock dividends, compared with stock split, 672; entries for, 667; entries for fractional shares of, 671; nature of, 667; on investment, 338; ordinary, 668; payable, 297; receipt of, different from that held, 340; reporting on balance sheet, 671; special, 668; simple capitalization involved in, 668
- Stock options, calculation of value of, 635; date for recognition of in the accounts, 635; granted as compensation for services, 634
- Stock reacquisition, **see** Treasury stock
- Stock redemption, 348; surplus appropriations related to, 694
- Stock rights, accounting for, by investor, 343; calculation of theoretical values of, 345; exercise of, by investor, 344; failure to exercise by investor, 345; granted to stockholders as means of increasing invested capital, 632; issued as compensation for services, 634; issued with sale of bonds or stock, 633; kinds of, 632; nature of, 342; sale of, by investor, 344; when received on several purchases, 345
- Stock split, compared with stock dividend, 672
- Stock split-ups, on corporate basis, 639; **see also** Split-ups
- Stockholders, number of, in the United States, 2; rights of, 584
- Stockholder's interest, **see** Capital Stockholders ledger, 58, 593
- Straight-line method of amortization of bond premium and accumulation of discount by investor, 366; of amortization of bond premium and discount on bonds payable, 551; of amortization of premium and discount on serial bonds outstanding, 558; of depreciation, 415
- Sub-accounts, expense, illustrated, 66
- Subscribers ledger, 591
- Subscriptions, defaults of, on stock, 594; for bonds, 548; for stock, 591; received in advance, 307; to capital stock, 183
- Subscriptions income, prepaid, 13
- Subsidiaries, advances to, 400
- Subsidiary company, 334; accounting for on books of parent company, 349
- Subsidiary ledger, 58; accounts payable ledger, 58; accounts receivable ledger, 58; advantages of, 60; expense ledger, 59; expense sub-accounts illustrated, 66; for plant and equipment, 430; plant ledger, 58; posting to, 59; stockholders ledger, 58
- Subsidiary records, for calculation of depreciation, 444
- Sum of life digits method of calculating depreciation, 451
- Surplus, alternative designations for, 20; appropriations, 689; capital, 656; classification of, 655; correction of, for misstatements of past periods, 770; donated, 656; earned, 655; free, 656; nature of, 655; paid-in, 655; recommendations for discontinuance of term, 20; revaluation, 655; **see also** Earned surplus; Paid-in surplus; Revaluation surplus
- Surplus appropriations, **see** Earned surplus reserves
- Surplus reserves, **see** Earned surplus reserves
- Surplus statement, 689; form of, 701; nature of, 701; to accompany income statement in all-inclusive form, illustrated, 704; **see also** Earned surplus

## T

- T form of account, 57; illustrated, 59
- Tangibles, fixed, 505; fixed, defined, 12

Tax procedures, in conflict with accounting procedures, 353, 476  
 Tax requirements, on conversion of stock holdings, 349; on sale of marketable securities, 167  
 Taxes, accounting for estimated, 310; on land held as investment, 425; personal property, 310; real property, 310  
 Temporary investments, composition of, 163; defined, 162; presentation of, on balance sheet, 169; **see also** Marketable securities  
 "Tentative Statement of Accounting Principles Underlying Corporate Financial Statements," 4  
 Term bonds, 558  
 Theoretical value of stock rights, 345  
 Thirteen-month year, adoption of, in reporting, 802  
 Tickets, as claim for goods and services, 315  
 Time drafts, 181  
 Title, passing of, 216  
 Tokens, as claim for goods and services, 315  
 Tools, accounting for, 427; kinds of, 427  
 Trade acceptances, 181  
 Trade discounts, 220  
 Trading on the equity, 834  
 Trade in, acquisition of plant and equipment by, 113; merchandise, 250  
 Trade-marks, 510  
 Trade names, 510  
 Transactions, analysis of, 56; business, 55; defined, 55; internal, 55  
 Transfer agent, 594  
 Treasury bonds, 555; acquired through sinking fund and kept "alive," 393; acquired through sinking fund and retired, 393; method of recording, 556; presentation on balance sheet of, 570; resale of, 556  
 Treasury stock, 14; accounting for, when viewed as capital element awaiting ultimate disposition, 626; accounting for, when viewed as capital retirement, 622; acquisitions of no-par, 627; de-

scribed, 620; donations of, 629; donations of, when assets were overvalued on original stock issue, 631; legal limitations in acquisition of, 621; recording donations of, 630; surplus appropriation for purchase of, 602; surplus appropriations upon acquisition of, 628  
 Treasury stock subterfuge, 630  
 Treasury tax notes, United States, presentation on balance sheet, 169  
 Trial balance, post-closing, preparation of, 131; post-closing, illustrated, 131; preparation of, 113  
 Trust indenture, 387  
 Trustee, accounting for transactions of, 389; in charge of sinking fund, 389  
 Trusts, 402  
 Turnover, accounts receivable, 829; financial advantages of increased, of merchandise, 833; financial advantage of increased, of receivables, 831; measurement of asset, 837; measurement of, of plant and equipment, 838; of finished goods, 833; of goods in process, 833; of merchandise inventory, 832; of raw materials, 833

U

Unappropriated earned surplus, 15  
 Unappropriated surplus, 656  
 Uncompleted contracts, profit measurement on, 252  
 Unemployment insurance, entries for, 302; federal law on, 300; state laws on, 300  
 Unemployment Tax Act, Federal, 300  
 Unissued bonds, presentation of, on balance sheet, 570  
 Unit-livestock-price method, of inventory valuation, 252  
 United States savings bonds, 376, tables of, 379  
 United States treasury tax notes, presentation on balance sheet, 169  
 Units, security, sale of, 596  
 Unsecured bonds, 361

Useful life, use of, in calculating depreciation, 443

V

Valuation, of current assets, 10; of current liabilities, 11  
 Vertical analysis, extensions of, 825; of comparative statements, 802  
 Voucher register, 70; illustrated, 71, posting from, 71  
 Voucher system, described, 70; procedures, 151  
 Vouchers payable account, 70

W

Warrants, fractional share, 671; of stock, 342; to stock rights, 632  
 Watered stock, 599  
 Weighted average method, as applied to inventory valuation, 225  
 Withholdings, employee, nature of, 67  
 Work sheet, for manufacturing company, illustrated, 118-119; preparation of, 117; preparation of, after fire loss, 528  
 Working capital, 826; American Institute position on, 9; defined, 8; importance of, 147; ratios in analysis of, 828; statement of application of funds in analysis of, 851  
 Working capital balance form of balance sheet, 18  
 Working papers, for corrected balance sheet, illustrated, 776; for corrected income statement, 774, for correction of account balances, 770; for correction of account balances, illustrated, 771, for correction of statements of prior years, 773

Y

Years' purchase, of excess earnings, calculation of goodwill by, 515